NOVEMBER 6, 1937

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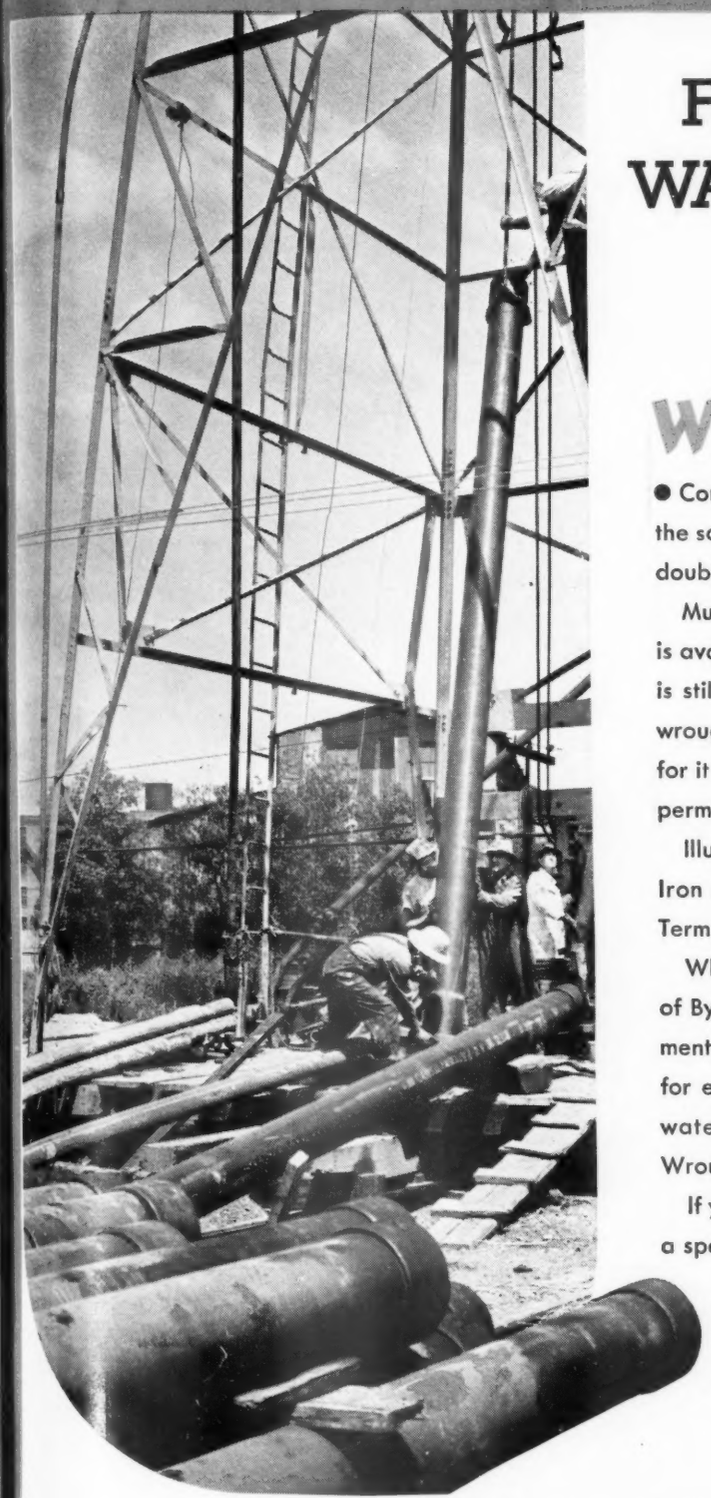
Railway Age

Founded in 1856



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OXWELD RAILROAD SERVICE

1912-1937

A QUARTER OF A CENTURY OF SERVICE TO THE MAJORITY OF CLASS I RAILROADS

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DON'T LET YARD DELAYS DISRUPT SCHEDULES

OPERATING men need not be reminded of the delays to main line traffc, under time-table and train-order operation, as a result of terminal or yard difficulties. They know how frequently a freight train, about ready to depart and already having had train orders issued to it, is delayed by last minute changes in the makeup. Such delays are extremely uncertain and frequently cause long delays to main line traffic because of the inability of the dispatcher to annul the orders and issue new ones. » » » »

An installation of "Union" Centralized Traffic Control, under which train operation is by signal indication without superiority of trains, will eliminate such delays! » » »

1332

1881 **Union Switch & Signal Co.** 1937

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NEW YORK MONTREAL CHICAGO ST. LOUIS SAN FRANCISCO

The Week at a Glance

CARLOADINGS: In the October 23 week carloadings totaled 773 thousand, down 5.3 per cent under last year.

●

RATE INCREASES: The member roads of the A.A.R. voted last week to see increases of approximately 15 per cent in freight rates, with some exceptions, and the Eastern roads want to make a 25 per cent hike in coach fares—the total change being expected to bring in approximately $500,000,000 of increased revenues.

●

BUSINESS AND RATES: Can industry afford a 15-per cent increase in freight rates?—is the subject of the leading editorial in this issue. It is pointed out that such an increase in freight rates is equivalent only to about a 1 per cent increase in commodity prices; and freight charges are a smaller proportion of the price of commodities at destination now than was the case in 1930. The effect of the rate increase on business, in short, should be negligible, whereas an increase in railway earnings will be of great benefit to all—more employment, more business for manufacturers.

●

PAC. ELEC. STRIKE THREAT: The President on November 1 appointed an emergency "fact finding" board to intervene in the dispute between the Pacific Electric and some of its employees who are members of the B. of R. T. and who threaten to go on strike. Professor I. L. Sharfman of the University of Michigan heads the "fact finders."

●

DEPRECIATION RATES: The Interstate Commerce Commission has issued orders prescribing equipment depreciation percentages for 11 roads, including the Santa Fe and the P. & L. E. The composite rate for the former company is 3.77 and for the latter 3.66 (rates for Diesel engines and stainless steel cars are higher than the composite average).

●

NET DOWN 15%: Net railway operating income in September was down 15.4 per cent under the same month last year. Increased costs of operation were to blame, these having risen 5.7 per cent, while gross revenues rose only 1.7 per cent. And, of course, these figures do not include the wage hike granted to train and engine service employees, effective October 1. No wonder the roads have had to lay off men—and those laid off can give credit for what has happened to them to the well-paid union officers whose salaries they help to pay.

●

R.R.S AND RECOVERY: The utilities, in their campaign against restriction by government, have secured acceptance in official Washington of their claim that—given a "break" which would restore their credit—they would spend a billion dollars a year in expansion and improvements, thus promoting employment and prosperity. But last week in Chicago Chairman Jesse H. Jones of the R.F.C. also made the same claim for the railroads—i.e., that the roads would spend a billion for improvements in 1938 if they could find the money. Chairman Jones, however, says it is largely up to the railroads, rather than to the government, to restore railroad credit; and that they can do it by wholesale consolidation of all the railroads into 9 or 10 great systems.

●

JIM CROW CONGRESSMAN: Congressman Mitchell of Chicago, a gentleman of color, will have a hearing before I.C.C. Examiner Disque at Chicago on December 10 on his complaint against the Illinois Central, the Rock Island and the Pullman Company for being forced to ride a "Jim Crow" car in Arkansas despite the fact that he held a first class ticket.

●

ANTHRACITE RATES: In exceptions filed to a proposed report of the Pennsylvania Commission reducing rates on anthracite, in which the I.C.C. order reducing passenger fares is used as a precedent, the hard coal carriers, while contending that the passenger fare order was *ultra vires*, nevertheless present a well-reasoned argument supporting the conclusion that, while passenger fare reductions *may* result in increased revenues, it does not follow that freight rate reductions would have the same effect. This argument—timely in view of proposed increases in both rates and fares—is summarized in a news article herein.

●

DEFENDS M. & ST. L.: The dismemberment of the Minneapolis & St. Louis and its partition among its important connecting lines will not be permitted if the I.C.C. follows the advice of Assistant Director Boles of its Bureau of Finance, whose views on this solution to M. & St. L. difficulties (proposed by Chairman Jones of the R.F.C.) are outlined in an article elsewhere in this issue.

●

DIESEL BIRTHDAY: General Motors at a luncheon in New York on October 28 celebrated the fortieth anniversary of the Diesel engine—and emphasis was laid on its application to railway service. Spokesman for the railroads on this subject was Ralph Budd, president of the Burlington, and his observations, as well as those of other speakers, are reported herein.

●

STOKER ARGUMENT: Automatic stokers are not safety devices—in fact hand-fired locomotives are safer. Such is the contention of the railroads in their brief of exceptions to the proposed report of Examiner King of the I.C.C. which would require the wholesale installation of these devices, purportedly in the interests of safety. The B. of L. E. and the B. of L. F. & E., by contrast, endorse King's recommendations "as far as they go."

BILLION LOST TO TRUCKS: Freight traffic lost by the railroads to competing transport agencies in 1936 totaled 196 million tons and represented a revenue loss to the rail carriers of from 600 millions to a billion dollars, according to a study by the I.C.C. Bureau of Statistics and which will be presented in summary in an early issue of *Railway Age*.

●

LAKE COAL DEMURRAGE: An I.C.C. examiner recommends that nine railroads be found to have violated the Interstate Commerce Act and the Elkins Act in their handling of demurrage on lake coal for transshipment.

●

10,000 COOL CARS: Nearly 10,000 air-conditioned cars, owned by the railroads and the Pullman Company, were in operation on October 1 and in the first nine months of the year 1,784 cars had air-conditioning equipment installed.

●

EQUIPMENT MONEY 2½%: Roads with good credit can still secure equipment money at remarkably low interest rates, despite the unfavorable turn of the market. The Burlington has sold an issue of $3,650,000 of 10-year 2½ per cent equipment certificates at a premium which makes its average annual interest cost 2.445 per cent.

●

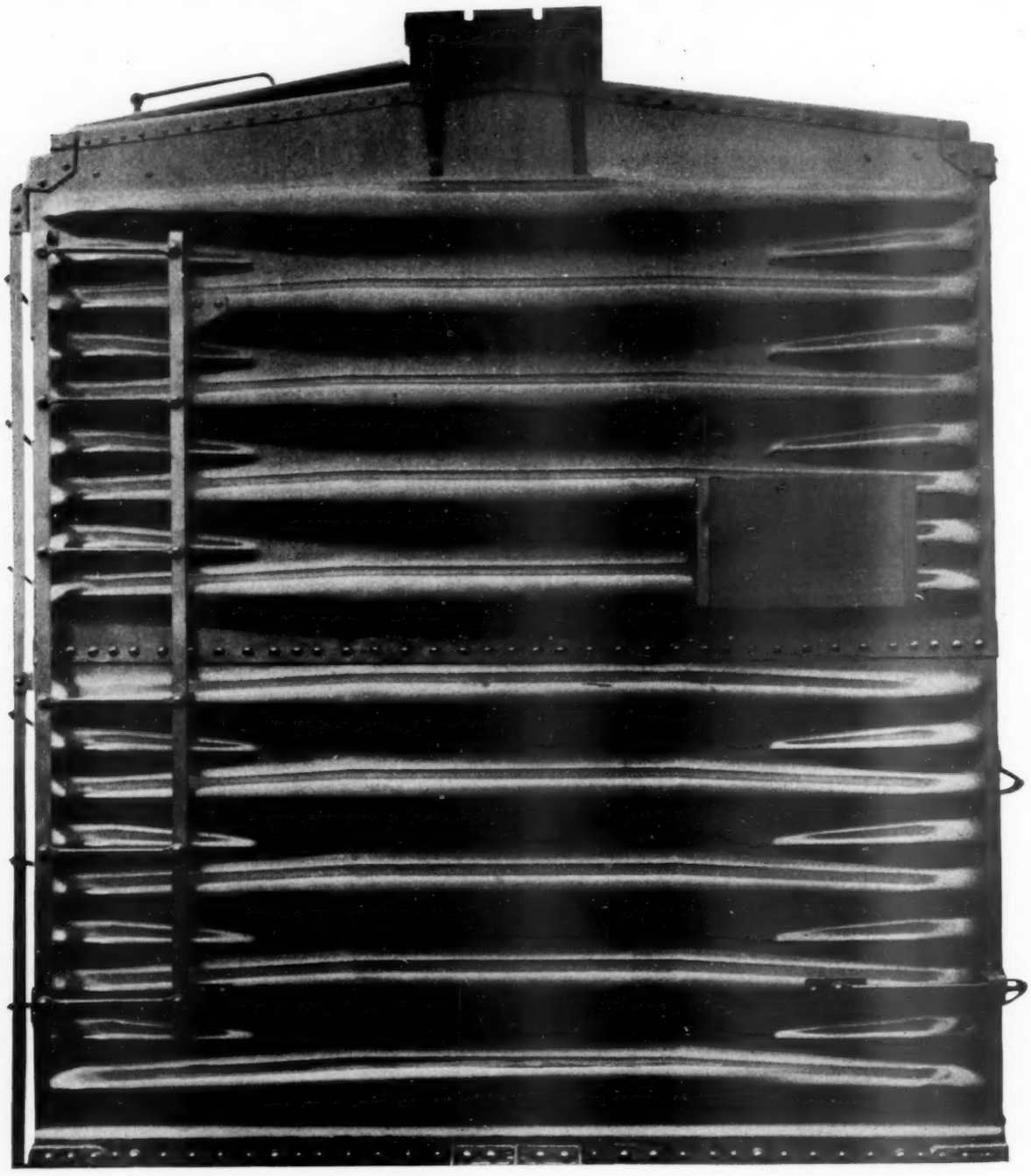
WHAT CUSTOMERS THINK: To learn what the feeling is among business men of the railways' high wage concessions and the rate increases necessary to compensate for them, *Railway Age* asked the opinions of editors of leading business publications and their replies are summarized herein. With few exceptions, the editors appear to believe that rate increases are justified; although many of them are critical of the extravagant demands of the labor organizations, holding the opinion that such overreaching will prove harmful to the railway industry and its employees as well.

●

PURCHASES UP IN AUGUST: Purchases by the railways from manufacturers in August were 34 per cent above those of August last year. An article in this issue analyzes the trends in railway purchasing, including tabular comparisons with last year.

●

BUSTED, BOOSTS PAY: Federal Judge Davis in St. Louis has "reluctantly" granted the Cotton Belt's trustee the privilege of boosting train service wages, saying that these wage increases have "knocked into a cocked hat" plans for reorganization of bankrupt railroads. Incidentally, where save the railroads can one find an instance of a business which is required to boost pay at a time when it is earning nothing for its owners and can't even pay its creditors?



WHEN THE DRAFT GEAR STOPS

THE DREADNAUGHT END STARTS

YIELDING UNDER EXTREME IMPACTS ONE FOOT
AS A CUSHION AGAINST THE SLIDING LOAD

RAILWAY AGE

Effects of a 15 Per Cent Advance in Freight Rates

The most important question that will be raised regarding the advance of 15 per cent in freight rates for which the railways have decided to ask will be what effect, if it is authorized by the Interstate Commerce Commission, it will have upon general business and the public welfare. The public has shown that it does not care much about the condition and earning capacity of the railways excepting to the extent it can be shown that their condition and earning capacity affect the public through the service they can render, the employment they can give and the buying they can do. Consequently, the question as to the effect that will be produced by a 15 per cent advance upon general business and the public welfare must be squarely faced and fully discussed.

All the other industries of the country will have to pay directly whatever advance in rates is made and will pass it along to the public in prices to whatever extent they can. There can be no serious question that a substantial advance will be allowed. It will be said by some, no doubt, that it will impose a new burden upon business and tend to retard its expansion. How much of a burden, then, would an advance of 15 per cent actually impose?

Changes in Commodity Prices and Freight Rates

The Interstate Commerce Commission issued in March, 1932, a study made by its Bureau of Statistics regarding the relationship that existed in 1930 between the freight revenues collected by the Class I railroads and the value of all the various classes of commodities they transported in that year. This showed that on the average railway freight charges in 1930 were 6.77 per cent of the average value of commodities at their destinations. They were, of course, higher percentages than this of the prices of cheap commodities, such as coal, and lower percentages of the prices of higher priced commodities. Between 1930 and the summer of 1932, when the bottom of the depression was reached, there was no decline in average railway revenue per ton-mile, while there was an average decline of about 26 per cent in wholesale commodity prices. Therefore, at the bottom of the depression railway freight revenue was about 9 per cent of the value of the commodities transported by rail. When that relationship existed every advance of 1 per cent in average commodity prices was about equivalent to a general advance of 11 per cent in freight charges.

Since the summer of 1932 the average wholesale price of commodities has advanced 36½ per cent. This has been equivalent in its effect upon what purchasers must pay for commodities to a 400 per cent advance in the average revenue per ton-mile that the railways were receiving at the bottom of the depression. Obviously if it had been proposed in the summer of 1932 to advance railway freight rates 400 per cent there would have been an outcry that it would make impossible a revival of business. Evidently, however, the government and the managers of business did not believe an advance in wholesale prices equivalent to a 400 per cent advance in freight rates would prevent recovery, because the government has encouraged the advances in prices that have occurred and the managers of business have made them. Meantime, average railway revenue per ton-mile has declined 12 per cent.

15 Per Cent Advance in Rates Only Equal to 1 Per Cent Advance in Prices

The resultant of the advances in prices and decline of freight charges that have occurred since the bottom of the depression five years ago is that on the average railway freight revenues are now slightly less than 6 per cent of the value at destination of the commodities transported by rail. On the basis of this relationship, a general advance of 15 per cent in freight rates would be equivalent to a general advance of less than 1 per

cent in commodity prices. Or, to state the matter otherwise, an advance of 15 per cent in freight rates would impose no burden whatever upon the consuming public, unless in order fully to offset it the other industries of the country make an average advance of about 1 per cent in their prices.

As a matter of fact, there occur fluctuations in prices from month to month and almost from week to week, that increase or reduce the total amount that the public pays for them more than it would be affected by a 15 per cent advance in railway freight rates even though the full advance in rates were passed along to the public in prices. The average advance in the wholesale prices of all commodities of 2.4 per cent between January and April, 1937, increased their aggregate cost to the public two and one-half times as much as an advance of 15 per cent in freight rates would amount to. The average advance in wholesale commodity prices of 10 per cent between June, 1936, and June, 1937, cost the public about ten times as much as a 15 per cent advance in freight rates would have cost even if the entire advance in rates were passed along to the public in higher prices.

The Really Important Matters Involved

The direct effect upon general business and the public welfare that would be produced by an advance of 15 per cent in freight rates may, therefore, be dismissed as almost negligible. Between 1930 and 1932 commodity prices declined 26 per cent when there was no reduction of the revenue per ton-mile received by the railways for transporting them. Between 1932 and 1937 commodity prices increased 36½ per cent when there was a decline of 12 per cent in the average revenue per ton-mile received by the railways for transporting them. Plainly, because railway rates are such a small factor in commodity prices, the changes in railway rates that have been made with recent years have had almost no effect on commodity prices; and a general advance of 15 per cent in railway freight rates would have little or no effect upon them.

The really important questions raised by the proposed advance in freight rates are quite different. As a result of the great economic changes that have occurred since 1929, and especially since the bottom of the depression in 1932, the balance between other industries, on the one hand, and the great railway industry, on the other hand, has been so completely disrupted that, while a 15 per cent advance in freight rates would have hardly any effect upon the general level of prices, it has become absolutely necessary in order to remedy the present railway situation, a continuance of which for many months would be most inimical to general business and the public welfare.

As has been shown heretofore in these columns, the recent recession of business and the increases in the prices, wages and taxes the railways must pay has reduced the net operating income the railways are now earning to a lower annual basis than in any year of the depression excepting 1932. Their net operating income must be increased if there is not to occur a railroad disaster that would be most inimical to general business and the public; and the needed increase in their net operating income can be secured only by an early and substantial advance in rates.

Increased Railway Buying Imperatively Needed

This increase in their net operating income is imperatively required principally to enable them to revive and increase their purchases of equipment and materials. In 1930 the railways had 56,582 locomotives and 2,276,867 freight cars. Although there was a relatively large increase in their buying of equipment last year the number of locomotives they owned declined in 1936 to 45,146, and the number of freight cars they owned to 1,758,192. Because of this decline in their equipment they narrowly escaped having a serious "car shortage" in the fall of 1936. They continued during the first two-thirds of 1937 to acquire larger amounts of equipment than in any year since 1930. But the old equipment was still wearing out and being scrapped faster than new equipment was being acquired. In the first eight months of 1937 they placed in service 526 locomotives and retired 925, a decline in the number owned of 399. They placed in service 58,510 freight cars and retired 72,244, causing a decline in the total number of 13,734. In consequence they now have almost 12,000 fewer locomotives, or 21 per cent less, and about 550,000 fewer freight cars, or 24 per cent less, than in 1930.

If the 15 per cent increase in freight loadings that occurred in the first five months of 1937 had not been followed, owing to the recession of general business, by a decline of about 5 per cent in freight loadings in October, the railroads this fall would have been unable to handle all the traffic offered to them. There is no reason for believing that the recent recession of business is the beginning of another major depression. On the contrary, there is good reason for believing that within a year another expansion of general business will commence. The decline in the amount of railroad equipment that has continued, and the general deterioration of railway properties that has now again begun, must be stopped if the railroads are not to get into a condition that will disable them from adequately enlarging their capacity and improving their service.

Railway Buying of $500,000,000 a Year Involved

If the railways did not need largely to increase their buying of equipment and materials in order to put themselves in a condition adequately and satisfactorily to serve the producing, shipping and traveling public there would be little point to emphasizing the beneficial effects upon general business that would be

produced by a large increase in their buying. As their future ability to render service imperatively demands an early and very large increase in their buying, the effects that this would produce upon general business constitutes an argument for an advance in their rates, and consequent increase in the net operating income, of vital pertinency and potency. Their buying of equipment and materials from the manufacturing industry decreased from about $1,500,000,000 annually in the pre-depression years to an average of about $270,000,000 in 1932 and 1933. Because of their needs and of what the increase in their net operating income enabled them to do, they increased their purchases from manufacturers to about $760,000,000 in 1936.

The further increase in their purchases that occurred in the first eight months in 1937 is shown in some detail in an article published elsewhere in this issue of the *Railway Age*. They were $448,954,000 in the first eight months of 1936 and $617,520,000 in the first eight months of 1937, a gain of 34 per cent. As the figures published elsewhere show, however, the bulk of this increase occurred in the first four months of the year, when the gain was from $198,540,000 to $346,032,000, or 74 per cent. In the next four months it was only from $250,414,000 to $271,488,000, or 8 per cent. It is encouraging that, while there were declines in May and June, there were increases in July and August in spite of the recession of business that was occurring in these months. As long as it was possible the railways were increasing their buying in an effort to meet the needs of the public for transportation. But years of experience have demonstrated that over substantial periods their buying of equipment and materials is determined, not by their needs, but by their ability to buy; and their ability to buy is determined by the amount of net operating income that they earn. Therefore, whether there will be a continuance and adequate increase of their buying and of its beneficial effects upon general business will be determined by how soon the Interstate Commerce Commission disposes of their case for an advance in rates and how large an advance it authorizes to be made. Experience indicates that a total advance in rates of $500,000,000 a year would make a difference of more than $500,000,000 a year in the amount of buying from the manufacturing industry that the railways would do.

Only a few months elapsed between the filing of the petition of the railways for and the granting by the Interstate Commerce Commission of much larger advances in rates in 1920 than that now being sought. The advances then authorized ranged from 25 to 40 per cent. The present emergency is as real as that which existed in 1920 and, like the one in 1920, has been caused mainly by advances in prices and wages. It is to be hoped that, as then, the business interests of the country will support, rather than oppose, advances in rates which now, as then, are imperatively needed, and that the hearings and decision in the present case will be expedited as much as practicable, as they were in the case in 1920.

The Economic Issue in a Nutshell

The position of traditional liberalism has been, in general, that the government should define the reciprocal rights and duties of individuals, should supply a framework of law and order, and should allow private individuals the utmost freedom of initiative and action within that framework.

The position of the "new liberals," or the advocates of a planned economy, on the other hand, is that private must be superseded by public planning —or that, in any event, public planning must play the chief and private planning a subordinate role. . . .

We must not make the frequent but cardinal error of regarding the Hoover regime as one of laissez-faire. Though Mr. Hoover talked often of "rugged individualism," his Administration moved steadily in the direction of governmental paternalism. . . . Under the New Deal the field of governmental controls has been enormously widened. . . .

Supporters of the New Deal contend that the numerous new controls it has imposed have been necessary to prevent a return to what they describe as the chaotic conditions of unrestrained competition and of the free market; to prevent the growth of burdensome surpluses of agricultural products, and to assure a fair wage and decent working conditions for workers, and an orderly and balanced economic life. Opponents of the program reply that in its totality it undermines private initiative, straitjackets industry, reduces total production, paralyzes action because of the uncertainty regarding what the government may do next, and tends to create the very chaos it is designed to avert. . . .

Traditional liberalism contends that, in a free market, it is the rise and fall of prices and profits which leads to increased production in this line and decreased production in that, and so achieves a balanced production of the thousands of different commodities that consumers demand. When the government intervenes through taxation or otherwise to reduce, on the one hand, the "excessive" profits of the more efficient producers or those in expanding lines of production, and, on the other hand, subsidizes the least efficient producers or contracting lines of effort, it is keeping labor and capital from flowing freely out of fields where they are relatively wasteful and into fields where they are most productive. It is attempting, in short, to freeze the existing balance of industries against progress. . . .

—*From an Article by Henry Hazlitt in the New York Times Magazine.*

The Diesel in Railroad Service

Commemoration of Fortieth Anniversary of completion of successful oil-burning Diesel engine

ALFRED P. SLOAN, Jr., chairman of the General Motors Corporation, was host at a luncheon at the Waldorf-Astoria, in New York, October 28, which commemorated the fortieth anniversary of the completion of the first successful oil-burning Diesel engine by the late Rudolph Diesel. The guests included railway executives, industrial leaders and financiers. Addresses were made by Charles F. Kettering, vice president and general manager of the Research Laboratories Division of the General Motors Corporation; H. L. Hamilton, president of the Electro-Motive Corporation, and Ralph Budd, president of the Burlington Lines.

Mr. Kettering, in his inimitable way, pointed out the fundamentals of Diesel-engine operation, and told of some of the difficulties which had to be overcome to make it applicable to railway service. Ralph Budd discussed the performance of Diesel locomotives. Mr. Hamilton paid a high compliment to the railways for making such prompt use of the Diesel engine in locomotive service. He briefly sketched the development of the application of the internal combustion engine on the railways, starting with the McKeen motor cars on the Union Pacific, in 1905, and bringing it up-to-date with the latest Diesel applications to locomotives. He also presented estimates of the potential savings of Diesel engines in railway service.

Mr. Budd's address and extracts from that of Mr. Hamilton follow:

Ralph Budd's Address

Surely there is in the account of Rudolph Diesel's life and his tragic end; of his great invention and what has come of it, an exciting story. My remarks, nevertheless, will be confined, as far as possible, to simple facts, untinted by any glow of enthusiasm. I shall not debate whether it was or was not wise for the railroads to inaugurate the fast train schedules which they did, but shall speak of the performance of Diesel locomotives handling those trains.

The most obvious question that suggests itself is why were railroads backward in adopting such an efficient machine as the Diesel engine. The answer is that they were not. Railways have known of the economy and rugged characteristics of Diesels from the first and have used them for many years in stationary plants. Diesel switching locomotives have been in process of perfection since about 1925. The new use, that in high-speed trains, began almost the very minute that the engine was so modified as to be suitable for such service. That suitability came when the two-cycle principle and the strong new metal alloys reduced the Diesel's weight from upwards of 150 lb. per horsepower to 21 lb.

The first of these lightweight engines I ever saw were the two which were at once an exhibit and also the power plant that operated the General Motors building at the Century of Progress in the summer of 1933. Many times we visited them and visualized one of them in the Burlington's streamline train which was then being built. We had a great disappointment when information came that the Winton people were being delayed in turning out our engine because they found it more difficult to cool on a train, than on the shore of Lake Michigan. There were, in fact, some weeks of delay because of this, but we were all delighted, and felt repaid for waiting, when in early 1934 the engine was pronounced satisfactory for installation. Soon thereafter, On April 7 to be exact, the train came out, and two days later on its trial trip between Philadelphia and Perkiomen Junction, made 104 miles an hour. This is how close on the heels of its readiness for high-speed train service the Diesel was put to work.

Why the Diesel Was Introduced

So far as Burlington is concerned, the original concept was primarily to provide an economical unit in a situation where some train had to be operated but earnings were insufficient for any profit. It was also hoped that the new unit would be more popular than the small steam trains or the gas-electric cars, of which many were and are in use. Under these circumstances, since a train had to be provided to accommodate the communities along the route, the new train would be successful if it did no more than reduce the cost of operation. If it should also stimulate travel, it would be doubly successful. Only after the economy had been shown to meet expectations, and the increase in patronage to be even more important, was the streamlined Diesel-powered type of train assigned to longer and more important schedules.

In the middle west several trains are being operated distances up to 1,000 miles daily, at an average upwards of 65 miles an hour. Most of them are Diesel powered. The Burlington operates four such trains of larger size, two between Chicago and the Twin-Cities and two between Chicago and Denver. Four Diesel electric locomotives maintain these schedules totaling 3,827 miles daily, an average of 959 miles for each locomotive every day. Eight Burlington Diesels have made on these four, and four shorter runs, a total of 3,504,617 miles. Tomorrow that total will be 5,903 more miles. I cite these figures to indicate the extent of our actual service experience.

Fast Overall Schedules

Diesels were chosen for these difficult schedules partly because they can make the fast time without running at excessive speeds. They do not have to stop enroute for fuel, water, and other attention as do conventional trains. Their tractive force is applied through electric motors, that is, by rotating rather than reciprocating movement, and for that reason they are easy on track. They weigh much less also. Including fuel and water, load that has to be transported in the locomotive itself is reduced by 40 per cent or more. On the Chicago-Denver Zephyrs that means eliminating 300,000 ton-miles daily. Further, as regards uniform speed, one of these trains on a thou-

sand-mile run stands still for servicing en route about 40 minutes less than a conventional train.

The importance of this is illustrated by the fact that if the eastbound Denver Zephyr, which uses 15 hours 38 minutes to Chicago, is delayed 40 minutes, its average speed for the 1,039 miles, in order to arrive on time, will be increased from 66.5 to 69.5 miles an hour. As a consequence the top speed would have to be about 100 miles an hour instead of about 90. The objective is to make a very fast over-all schedule with the slowest possible maximum. A seeming paradox, but obviously the most nearly perfect performance is when the highest speed is kept down as nearly as possible to the average. Occasional bursts of speed are made up to 110 miles an hour or more, but generally that is not necessary with Diesel powered trains on present schedules.

Cost of Maintenance

The cost per train mile for locomotive maintenance, locomotive fuel and lubricating oil on the four smaller Zephyrs (3 and 4 cars each) has been an average of 4.84 cents. The cost per locomotive mile for steam drawn trains of the same carrying capacity had been 28.98 cents, but these, of course, were not new steam locomotives and their schedules were much less exacting. For the larger trains comparisons are even more difficult because we have no similar steam schedules, but the cost of locomotive maintenance, locomotive fuel and lubricating oil for the Diesel locomotive with six trailing cars has been 11.9 cents, while that for the Diesel locomotive with ten trailing cars has been 18.4 cents. These are actual cost figures. The Diesels are so new that general repairs have not been necessary as yet. These will add about three cents to the ultimate cost per mile.

The first cost of a Diesel, of course, is much more than that of a steam locomotive of corresponding power, but it seems conservative to say that one Diesel can make as many service miles, year in and year out, as two steam locomotives, where the schedules present that opportunity. By this I mean that on the runs between Chicago and Denver and between Chicago and the Twin-Cities, for example, where 1,039 miles and 882 miles are made each 24 hours respectively, I think the average is at least twice what could be expected from steam locomotives of existing types. In other situations, where the entire daily trip covers 600 miles or less, the opportunity is lacking to make the longer mileage.

The extent to which an engine can carry out its assignment is of great importance. Expressing this as "per cent of availability" our Diesel showing is approximately 95, as against approximately 70 for all locomotives, and the "on time" performance has been 96 per cent perfect. The high degree of availability of the Diesel is due largely to the fact that it does not require "back-shopping" in the ordinary sense. Moving parts, which consist chiefly of wheels, pistons, cylinder liners, rods and shafts, may be replaced on mileage schedules and removed one at a time before excessive wear or failure. In this way, most of the work can be done currently during the lay-over periods.

Major jobs, such as changing a crank shaft, will require perhaps a week in the shop, but careful calibration after more than a year of service on three of our Diesel engines indicates that crank shafts will not need to be changed oftener than about once every million miles; even in the most severe service, that of the Denver Zephyr, this would be about every two and a half years. We now have sufficient experience to know approximately the proper schedule for cylinder liners, pistons, crank shafts, wheels, etc., and there seems to be no reason why the high availability should not be continued permanently, and costs gradually reduced. As for the engine frame, experience has demonstrated that it lasts indefinitely in the stationary Diesel, and there is every indication that the new alloys, which have made the frame lighter but even stronger, will be as sturdy and permanent as the material in the older type engines.

Diesel in Switching Service

There are about thirty Diesel locomotives now doing daily duty in high-speed train service and a much larger number—perhaps 230—are engaged in switching. In some respects the latter requirements are the exact opposite of those in streamline trains—slow heavy movements versus fast Zephyrs—but one characteristic is common; it is the continuity of use. The selection of Diesels for switching service has been at those places where they can be used almost 24 hours a day. The investment cost per service hour thus is reduced to a parity with, or possibly below, that for steam. Readiness to serve, quick starting, and an unobstructed view in switching service are valuable features. The first Diesel switcher in my experience was purchased in 1926 for use in the Minneapolis milling district. It is a far call from that machine to the present Diesel, but the essential elements are the same. The first year it was out of service about a third of the time because of so-called "bugs" that developed with use. They did not represent inherent defects, and since they were removed, the locomotive has been giving an excellent account of itself, still working regularly three shifts a day.

It is something entirely new for a railroad to be able to order a half dozen switch engines and have them delivered within a week just as one might purchase so many highway trucks, but that has been our experience and the experience of other roads since the Electro-Motive plant has been going at La Grange. A unique feature of operations in our Western Avenue yard at Chicago is that with normal business, the entire yard is handled with a fleet of Diesels. Incidental costs such as maintenance of roundhouse, turntable, water, and fuel station facilities are entirely avoided. According to the Association of American Railroads the railroads' water bill is $50,000,000 a year. The Diesel of course minimizes this. These switchers work practically continuously, and I mean this literally. They have to take water and fuel once in four days. Our experience has been with two sizes, the so-called 600 horsepower and the 900 horsepower, both of which, incidentally, develop tractive effort greatly in excess of the indicated ratings. Their small dimensions completely belie their potency.

Switching units represent about one-fifth of the 45,000 locomotives on American railways, passenger units another fifth; the other three-fifths are road freight locomotives. In the last mentioned class there is no actual experience with Diesels to relate. Except for some transfers between terminals located a few miles apart, line haul has been performed with steam locomotives.

What of the Future

What of the future! The modern steam locomotive reflects fully the benefits of research and applied science. It is a much more efficient machine for handling fast heavy trains than it was only a few years ago, and doubtless it will continue to improve. The use of new metal alloys greatly reduced the weight of reciprocating parts and hence the "pound" on track; better lubrication and larger tenders make for longer runs. It may be found desirable to use steam turbines on locomotives.

The use of Diesels in switch service may be termed a "natural;" their advantages in road haul is by no means so obvious. But we have become so accustomed to having progressive organizations like General Motors solve almost any problem to which their research and engineering departments set their minds, that it would be foolhardy to predict that Diesel locomotives will not invade every field of railroad transportation. The experience of the last five years should prepare us for almost anything and it seems safe to say that railroad motive power has entered upon a period of steady improvement, and whatever developments occur, the public will be the beneficiary.

H. L. Hamilton's Address

Extracts from the address of H. L. Hamilton follow:

Quite in keeping with the traditional alertness of the railroads to means of improving operations, the industry took early notice of the internal combustion engine and was interested in its potentialities at as early a date in the history of this engine as were any of our industries. The problem of applying the internal combustion engine to railway transportation, however, presented many more puzzles than the automobile, stationary or marine fields. Its success upon the rails consequently has been slower than in other fields.

Had we been given simply the job of substituting Diesel for steam in the regular service which steam was giving at the time, it would have been a full-sized job. But, when we undertook to create the motive power for an entirely new class of high-speed service, the job really became "colossal." All of us who were collaborating soon found that many new problems had been created; that there were a lot of things which worked well in the laboratories or on the test floors that did not do so well when we got them in actual operation. For instance, no one ever before had subjected axles, wheels and brakes to hundred-mile-an-hour strains. Wheels spinning at nine hundred to a thousand revolutions a minute are something quite different from wheels spinning at five to six hundred per minute. We tackled these inevitable problems as they came up and can point to the high availability of Diesel power as the answer to the query whether we have met them successfully.

Few persons realize the growth of Diesel service on the main lines. Figures from the railroads using General Motors Diesel power in high-speed passenger service show these trains travel a combined average of 19,420 miles a day, or in excess of seven million miles a year. Some of these locomotives have covered more than a half million miles without major overhaul.

Diesel a "Natural" in Switching Service

The Diesel locomotive in switching service, to use a familiar term, is a "natural" because of its astonishing economy, greater initial starting effort, high availability, superior flexibility, greater safety and work output. The same observations hold true in high-speed passenger service but figures for exact comparison with steam locomotives in comparable service are not available, mainly for the reason that there are no steam locomotives in comparable service. No steam locomotive in all history has ever been called on to make, month after month, better than a thousand-mile run every day at schedule speeds of more than 60 miles an hour.

However, the Diesel switcher is assigned the same job that the steam locomotive is on, so there are reliable figures upon the performance of both Diesel and steam in this service; let's look at them for a moment.

In 1936, Class I railroads spent about $35,000,000 for fuel in switching service, exclusive of the cost of moving the fuel to the point of usage and return of empties. Diesel switchers will normally reduce this expense 75 per cent. In ordinary switching service one tank car of fuel oil would cover as many service hours as 12 cars of coal.

The railroads spent about $45,000,000 for repairing locomotives in switching service. Diesels will reduce this item approximately 50 per cent. They spent $16,000,000 for enginehouse expenses caring for locomotives in switching service; this includes cleaning fires, handling ashes, cleaning grates, boiler washing and government inspections of firebox and boiler, etc. This service on Diesels is negligible.

In 1936, these railroads spent $3,500,000 for water for switching locomotives. The Diesel practically eliminates this expense.

In substituting Diesels for steam locomotives the capital investment will be no higher, as three Diesels will normally cover as many hours of service as four steam.

The Diesel switchers are normally available for not less than 8,000 hours or 330 twenty-four-hour days a year. Steam switchers are rarely available for more than 6,000 hours a year.

In 1936, Class I railroads worked 41 million switching hours at a total cost of 276 million dollars. This operation involved the use of over 12,000 steam locomotives with average age over 23 years, of which only 8,000 were designed for switching service. This indicated that about 4,000 of these locomotives were of the road type and not effective for economical switching.

Diesels Reduce Operating Expenses

From quite complete studies, and our experience with Diesel power, we are convinced that were the Class I railroads to put 3,000 Diesel locomotives in switching service, this number of Diesels, or about 25 per cent of the present locomotive inventory, would cover approximately 50 per cent of the present switching hours, and effect a saving in operating expenses of $52,000,000 yearly. This saving would be sufficient to liquidate the investment fully in Diesel locomotives within five years, and would permit the retirement, without replacement, of not less than 5,000 old and obsolete steamers with their current excessive operating cost, which would more than meet the cost of acquiring Diesels.

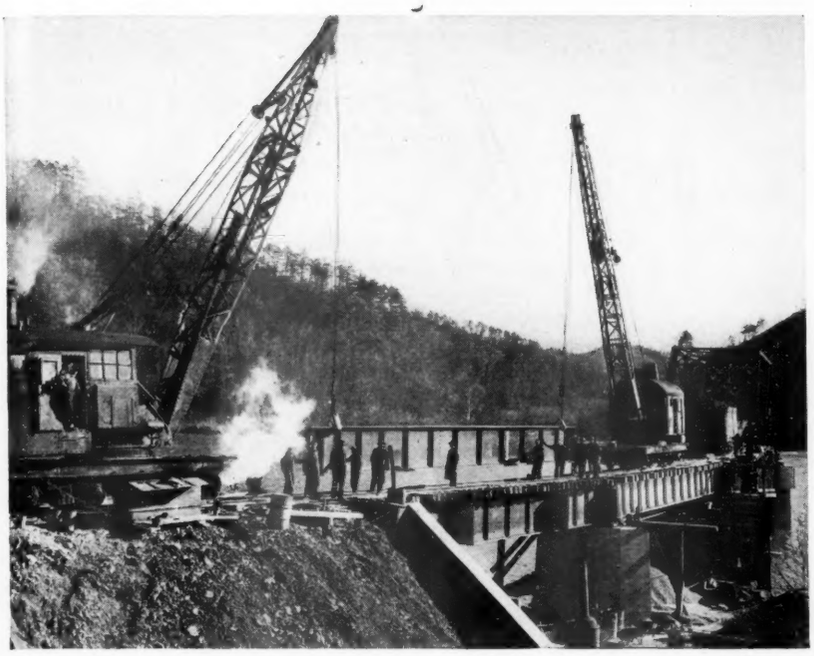
But even this impressive saving does not reflect the full potential savings with Diesels. The full economy of Diesel operation will not become effective until Diesel completely supplants steam in a given engine district, thereby eliminating the supporting services of steam that are not needed for Diesel, such as coal docks, water stations, track pans, water treating facilities.

One railroad recently has completely Dieselized a branch line with two locomotives. They relieved five steam locomotives, and their supporting services and effected a liberal reduction in operating expense.

Diesels have served materially to accelerate schedules everywhere. For instance they have shortened the time between Chicago and the Pacific Coast to 39¾ hours from the previous low of 56 hours; and from Denver to Chicago from 26 to 16 hours. They have materially shortened the travel time between a dozen commercial centers of the South and Midwest.

Over 600 motor rail cars are in service on the five trunk-line roads of France, according to the Railway Gazette (London). These cars cover a total route mileage of 140,000 kilometers (87,000 miles) daily. Mechanical transmission of power is utilized on the greater number of units.

Bridge and Building Men Hold Busy Meeting



Reports on painting, trestles, movable bridges, and water service, and papers on accident prevention and the relationship with the purchasing department contain valuable information

Part II

SUPPLEMENTING a running report of the convention of the American Railway Bridge and Building Association that appeared in the *Railway Age* of October 30, together with abstracts of four committee reports, we present here excerpts of the four remaining committee reports and two papers that were included in the program. The papers, by C. E. Smith, vice-president-purchasing and stores, New York, New Haven & Hartford, New Haven, Conn., and S. H. Osborne, assistant to vice-president operation, Union Pacific, Omaha, Neb., covered, respectively, the Relationship with the Purchasing and Stores Department, and Some Reasons Why Bridge and Building Men Are Injured. The committee reports embrace the following subjects: Meeting Today's Demands for Water Service, The Maintenance of Movable Bridges, Current Practices in Building Timber Trestles, and Taking Up the Deferred Maintenance in Painting.

Smith Urges Co-operation with Purchasing Department

The ability to furnish the right goods, according to C. E. Smith, vice-president-purchasing and stores, New York, New Haven & Hartford, depends upon the possession of proper requisitions, proper specifications, proper inspection, reliable sources of supply, and proper handling, and storage if necessary. Having the right amounts of materials available requires a careful survey of requirements and attention to the progress of the construction and maintenance programs.

To secure the right price, he continued, the purchasing department must have the widest possible information on sources of supply and secure currently competitive bids to discover which companies, at particular times need orders most and are willing to make shipment at the lowest price.

There is nothing quite so expensive as buying for quick shipment when insufficient time is allowed for the purchasing department to secure and canvass the necessary bids.

Materials Expensive to Handle

Addressing his remarks more specifically to his audience, Mr. Smith said that proper co-operation between the bridge and building department and the purchasing and stores department, "will enable us to provide for your wants" without maintaining an unnecessarily large inventory in bridge and building materials. This is particularly important because bridge and building materials are expensive to handle and store, and deteriorate rapidly in storage. Money should not be tied up unnecessarily in such materials. Impending price increases alone can justify the purchase and storage of surplus stock.

The purchasing and stores department should provide what the bridge and building department wants unless it is clear that equal results can be secured by using other materials. No purchasing or stores department officer should arbitrarily make any substitution without consulting the bridge and building department, but the latter should be ready and willing to submerge its preferences when it is clear that substitutes will give as good results at less expense.

In concluding his remarks, Mr. Smith said that bridge and building forces can serve themselves and their railroads by finding new ways of doing work so as to conserve materials and offset the rapidly increasing costs from which the railroads are now suffering. "Work closely with your stores department," he added, "and

you will be amply repaid with the kind of service you desire."

Osborne Discusses Accidents in Bridge and Building Work

In presenting the subject of injuries to bridge and building men, S. H. Osborne, assistant to vice president operation, Union Pacific, grouped the basic causes of accidents under three headings, namely, failure of supervisory responsibility, lack of character and knowledge on the part of the foreman, and carelessness or thoughtlessness of individual employees. Specific accidents and their causes were cited to drive home the precepts enunciated.

Focusing his attention first on supervision, Mr. Osborne declared that the primary requisite for safe practice is the proper attitude of the supervisory officer. In addition to a thorough knowledge of safety rules, the supervisor must be observant and tactful, and must also possess the "intestinal fortitude" to correct violations when they come to his attention. A too common fault, he said, was the tendency to leave enforcement largely in the hands of the foreman. He declared also, that, contrary to the opinions held in some quarters, strict observance of safety rules does not reduce production. It increases production and reduces costs by stopping loss of time of men in a gang when a serious injury occurs; it also reduces claim payouts. In addition, the morale of employees is better when they see that the rules of safe practice are being carried out in full detail.

Conscientious attention to duty also plays an important part. A supervisor must know the manner in which each of his foremen carries on his work, he said. He can get this information only by personal contact and observation. The more such contact he has, the better is his supervision and the better is his accident record.

In Mr. Osborne's opinion no attribute of the foreman has a greater influence on his success in accident prevention than his ability as a leader. A foreman who is assigned to work beyond his capacity is more liable to have trouble than one who has demonstrated his ability to cope with the task in hand. The strength of character to insist on observance of safe practices is a primary requirement. He must be made to realize also that many men do not think and that it is up to him not only to do their thinking for them, but to break them of bad habits.

Following up this line of thought in discussing the shortcomings of the workmen, he said that many accidents are caused by a failure of the men to determine the right approach to a given task. Too often they proceed along the line that first occurs to them or that involves the least effort. The foreman, Mr. Osborne continued, must not only be on the alert to detect unsafe methods, but must also take pains in explaining minutely why these methods are liable to result in accidents. Where a foreman watches and corrects his men, it is his belief that their sense of personal safety may be developed with beneficial results to them and to their employers, and by instructing them in right methods, the repetition of injuries due to the same causes is made less probable.

Discussion

Comments on Mr. Osborne's paper consisted largely of a recital of methods pursued on various railroads to stimulate interest in the safety movement. Among other measures mentioned was the use of cards for the solicitation of suggestions from the men, one speaker bringing out the fact that the suggestions received in this way have to do in most cases with the correction of conditions rather than practices. Mr. Osborne's comment was that all such suggestions should be acknowledged and given serious consideration, regardless of their merits.

Current Practices in Building Timber Trestles

The report presented by Walter S. Lacher, engineering editor of the *Railway Age* and chairman of the Committee on Recent Development of Timber Trestles, traced the changes in the design of trestles since the association was organized in 1892. Early modifications eliminated the corbel and the mortising of members and were concerned also with increases in the size and number of members to afford adequate strength for greater loads. More recent changes in design were prompted by the urge to facilitate preframing and the committee presented descriptions and illustrations of various details of trestle design developed on various roads with primary object of providing simple field adjustments to accommodate reasonable tolerances in dimensions.

While the committee found that there is general agreement as to the feasibility of preframing, it reported rather wide differences of opinion concerning the practicability of preboring. One requisite is a high degree of accuracy in driving piles, and the report included a statement by one member of the committee on the methods of pile driving that will insure sufficient accuracy in the placing of piles to permit substantially all holes in the trestle to be prebored.

In the portion of the report relating to construction methods, the committee stated that changes in the design of pile drivers in recent years had been limited to refinements in details that make for greater reliability, ease, operation and accuracy in driving. Opinion is still divided as to the relative merits of the full-revolving and single-end track drivers. Construction practice has been influenced to a greater extent in recent years by the introduction of power equipment for such operations as sawing and boring and, to a lesser degree, for handling timbers. With respect to the latter, the committee found that some railroads had effected appreciable economies from the use of small power cranes, but that at least one road had experienced excessive loss of time because of traffic interference.

The report also embraced a review of measures designed to prevent the abuse of treated timbers during erection and recommended the swabbing of surfaces of field-cut timber and the pressure treatment of field-bored holes.

Much of the discussion comprised statements of experience with power saws and augers and, while the use of both electric and pneumatic tools was reported, several speakers said that the former were hazardous in locations where conductors are likely to become wet. Two speakers advocated the use of treated caps and sills in structures otherwise built of untreated wood, but others opposed the use of any untreated wood in new structures. It was reported also that an effort to reduce fire hazard had led to the use of salt-treated wood in some cases.

Maintenance of Movable Bridges

A brief report presented by J. L. Vogel, bridge engineer, Delaware, Lackawanna & Western, as chairman of

the Committee on the Maintenance of Movable Bridges, reviewed the practices on various railroads based on responses to a questionnaire. The data received related to 113 swing spans, 27 vascule spans and 16 vertical lift spans.

Mechanical difficulties, according to the replies received, are concerned mainly with gears, racks and rollers, and are overcome by better design and replacement with material of a better quality. However, little information was received concerning the replacement of parts.

A diversity of policy was disclosed concerning the selection of the operating personnel, although the employees are drawn from bridge and building forces on most roads. Inspections, as a rule are made by bridge men, although mechanical department employees participate in some cases. The same practice prevails with respect to repairs, responsibility for the upkeep of machinery, on a few roads, being imposed on the mechanical department.

In conclusion, the committee directed attention to the lack of uniformity of practice or policy and offered the following comment:

This very fact indicates the necessity of formulating rules for the inspection and maintenance of movable bridges which can be applied uniformly to the various types of movable spans so that the inspector will have definite instructions which he can follow on his inspection. Each type of movable bridge has various details that require specific attention by virtue of the type of operation, and the rules could very well start by calling attention to such points of inspection, followed by information concerning the type of maintenance required to maintain these in working order.

The discussion indicated that few roads have issued comprehensive instructions for the inspection and care of movable spans and their operating machinery. The discussion also indicated that wherever the span-operating equipment is properly designed, installed and maintained, there is little difficulty with operation.

Meeting Today's Demands for Water Service

According to the Committee on Meeting Today's Demands for Water Service, the problems now confronting the officers in charge of water supply facilities are mainly those that arise by reason of the faster trains, more exacting schedules and larger locomotives and tenders. The report was presented by the chairman of the committee, H. B. Christianson, division engineer, Chicago, Milwaukee, St. Paul & Pacific.

Foremost among the requisites of water stations, so far as they have a relation to the maintenance of fast schedules, is reliability of service. As pointed out in the report, schedules of both passenger and fast freight trains, presume the taking of water at regular station stops, at points where the locomotives are serviced, where switching is done, etc. Consequently, any condition that demands the taking of water at other points results in a loss of time.

Another common requirement under present-day conditions to which attention was directed, is the need for larger storage and discharge capacity at a smaller number of stations. The primary influence to this end is the trend toward larger capacity cisterns in the tenders of the newer locomotives as a means of reducing the number of stops for water. But, as indicated in the report, this gives rise to a demand for a greater rate of delivery of water from water columns, so that a greater quantity of water may be taken with a minimum of train detention. This demands larger delivery pipes from the storage tanks and the construction of tanks at a greater height to increase the head.

Attention was directed also to the necessity of raising water columns to permit delivery to new tenders having manholes at a greater elevation above the rails. Another well-defined trend is the consolidation of facilities for the delivery of water, coal and sand, and for the dumping of cinders at one spotting of the locomotive. While the shortening of passenger train schedules has led in some cases to changes in facilities whereby it has become possible to avoid stops for water at any points other than passenger stations, the reverse is true with respect to freight trains, since it is desired to deliver water to freight locomotives only at points where the stop can be made without blocking highway crossings.

In regard to water treatment, the committee stressed the importance of uniformity in the quality of water over greater territories, because of the inherent influence of this refinement on the success of long locomotive runs. There is also a well-defined urge to provide water of better quality because of increased pressure for improved locomotive performance. Progress in water treatment was indicated by the statement that facilities for chemical conditioning at more than 2,000 stations are now treating excess of 135 billion gallons of water annually, and that at least 100 billion gallons more are being treated internally.

In conclusion, the committee stressed the importance of maintaining water service facilities to a high standard for the purpose of avoiding breakdowns that will result in disruptions to train schedules.

Discussion

Several speakers directed attention to the opportunities for effecting economy in water service by reducing the number of stations since, as was pointed out, larger cisterns in locomotive tenders make it possible to space water stations about 40 miles apart instead of 12 to 15 miles. One member reported that the number of water stations on one division had been reduced from 22 in 1922 to 8 at the present time, of which 2 are now out of service. Another member urged water service officers to take the initiative in this matter, rather than force operating officers to do so, as has been true in some instances. One of the speakers endorsed the committee's stand concerning refinements in water treating practice, stating that treatment of "bad" water on his line was followed by a demand for the treatment of what had previously been considered "good" water.

Taking Up the Deferred Maintenance in Painting

A committee, of which T. P. Soule, general supervisor of bridges and buildings, New York Central, was chairman, directed emphatic attention to the depreciation of bridges and buildings that has been brought about by the curtailment of painting programs during the depression. Citing an article with the title, "How Far Behind in Painting?", that appeared in Railway Engineering and Maintenance for October, 1936, the committee endorsed the statement appearing therein that, "for the country as a whole, the painting of buildings is at least five years in arrears and that the painting of bridges is not less than four years behind."

General examples were cited of the high cost of de-

ferred painting in cases where neglect had resulted in deterioration demanding replacement. One of these was set forth by the committee as follows:

"Steel bridge of 982 tons. During a period of 26 years inadequate paint maintenance resulted in the replacement of 583 tons of steel, at a cost of $47,000. This cost included removal of the old and placing of the new steel (without increasing the capacity of the structure) and maintain traffic. At 51 cents per ton per year for paint maintenance, the total amount expended over 26 years, including interest at 5 per cent, would be approximately $27,819, or $19,291 less than the amount expended for renewal alone, excluding any painting and interest charges whatever."

While urging the resumption of painting on a scale that will insure protection, the committee pointed to the need for a critical study of requirements. For example, attention was directed to the loss incurred if structures are painted on a line that is shortly to be abandoned. The committee made a plea for thoroughness in any painting that is done, declaring that one-coat work on poorly cleaned surfaces will serve no purpose other than to effect a temporary improvement in appearance. This position was supported by the following statement: "If it should cost $1 per unit to prepare the surface and apply one coat of paint which might last one year at the most, it would cost $1.25 to apply two coats, which would probably last three years; or it would cost $1.50 per unit for three coats, which would probably last five years."

The committee recommended the use of paint-spraying equipment and the purchase of paints of demonstrated merits rather than paints manufactured to meet specifications.

Discussion

The discussion turned to the relative merits of brand and specification paints, with the belief generally expressed that the former are superior, although there were one or two who dissented from this view. Substitutes for painting were discussed as emergency means for protecting steel surfaces when appropriations for painting cannot be secured, and the use of spent crank-case oil and oil having a heavy-asphalt base, which is being followed on certain sections of the Canadian National and the New York Central, respectively, was described by President Neville and Mr. Soule.

Jones Warns Roads Not To Rely on Rate Increases

ELIMINATION of expensive and unnecessary duplications of service as a solution to the railroad problem rather than too much reliance on expected rate increases, was advised by Jesse H. Jones, chairman of the Reconstruction Finance Corporation, at the fifth annual dinner of the Association of State Street Seniors at Chicago on November 1. The Interstate Commerce Commission, he said, will undoubtedly give the carrier's request proper consideration but management must find other means by which earnings can be enlarged. "I sometimes wonder," he said, "whether if railroad managements had to find their own salaries and were freed of banker domination, and could not seek the shelter of the courts in lean years, they could not bring about many savings."

One suggestion he made was the reduction of what he termed excessive train service. As an example, he contended that 2 or 3 routes and 8 or 10 daily trains instead of the present 24 trains operated daily by 6 independent systems maintaining 9 tracks, could handle the present passenger business between Chicago and the Twin Cities, while reductions in the train-miles operated by the railroads between Chicago and Milwaukee and the train-miles of the 11 trains between Houston and Dallas would increase net earnings. Reductions of train-miles and other devices for improving railroad efficiency, he said, often involve a reduction of employment but this should not be a hindrance, for employee dismissal insurance can be used to bring them about without jeopardizing the welfare of employees.

The best solution to the problem, he said, is co-ordination and consolidation of service. To this end he recommended five systems west of the Mississippi river —two occupying the northwest and middle northwest, two the west and southwest, and one the central section. East of the river he suggested two systems for the south and southeast and two or possibly three for the territory including St. Louis, Chicago and the east.

In discussing the problem from another angle he said that security holders cannot expect the government to insure their investments. On the other hand, with the government regulating the railroads, truck and waterways should not be subsidized. "Althought it appears that we have more railroad mileage than we can support," he continued, "the fact that we are living in a streamlined age, with new forms of competitive transportation, does not mean that we can do without railroad transportation. To transport by truck a train of 3,500 tons of coal, 750 trucks would be required, and you can imagine how much more difficult it would be to pass 750 trucks on the highway than it is to wait at a railroad crossing for a train to pass."

Rates must not be raised too high, he said, for if they are the consumer of goods and business suffers. The inability of the railroads to increase rates in recent years, he continued, has caused a large amount of deferred maintenance; if the railroads had sufficient credit to borrow money they would spend a billion dollars for improvements in 1938. In spite of the lean years they have experienced, he said, they have repaid three-fourths of the money borrowed from the Reconstruction Finance Corporation. Of the 79 roads that borrowed, 32 have paid their loans, while only $163,000,000 is owed by 22 railroads now under jurisdiction of courts.

The dinner of the association this year was sponsored by business houses located on State Street and was a climax to Chicago's Charter Jubilee Celebration. Special tribute was paid to the railroads for the part they have played in the city's development.

One of the outstanding features of the program was a pageant of transportation created and produced expressly for this occasion by 27 railroads. It was arranged by a committee consisting of Harry G. Taylor, chairman of the Western Association of Railway Executives; H. W. Siddall, chairman of the Transcontinental and Western Passenger Association, and C. A. Fox, chairman of the Central Passenger Association. The scenes of the script unfolded Chicago's development emphasizing progress in transportation by means of scenes which dramatized the 36-hour stage coach schedule between Chicago and Milwaukee 100 years ago, the construction of Chicago's first railroad, and today's vast railroad system that requires the employment of 80,000 persons in the Chicago terminal area. This 30-minute production was enacted by professional talent and was broadcasted over the Blue network of the National Broadcasting Company and its 40 outlets throughout the country.

Critical Situation Needs Prompt Attention, Says Rate Petition

Increases of 15 per cent in freight charges and 25 per cent in Eastern coach fares sought to assure continuance of adequate rail service

WASHINGTON, D. C.

DECLARING inadequate earnings and rising costs of operation have placed the railroads of this country in a critical situation which, unless promptly met by increased revenues, will seriously impair their ability to continue adequate service to the public, the Association of American Railroads on November 5 filed a petition with the Interstate Commerce Commission for authority to make a 15 per cent increase in freight rates and a 25 per cent increase in Eastern coach fares. The petition, filed in accordance with the plan announced by J. J. Pelley, president of the A.A.R., following last week's Chicago meeting of member roads, defends the general-increase procedure as proper in view of the fact that "the increased operating costs are general in character and apply to all traffic handled."

Calculated on the basis of operations for the year ending June 30, 1937, it is estimated that operating expenses and taxes, as they will be on and after January 1, 1938, will be up $664,789,000 per year as compared with the costs obtaining in May, 1933. Thus the relief to the extent of $50,000,000 a year expected to be obtained as a result of the Ex Parte 115 decision leaves a post-1933 increase of $614,789,000 "wholly uncompensated for by maximum total increase will be 10 cents; anthracite coal, 25 cents per net ton; lumber, 6 cents per 100 lb.; sugar, 15 per cent applied to rates becoming effective December 15, subject to 6 cents per 100 lb.; fruits and vegetables, 15 cents per 100 lb. Eastern coach fares would be increased from 2 cents to 2.5 cents per mile, but no change in Pullman or commutation rates is contemplated. With respect to passenger fares in the Southern and Western districts, the petition points out that roads in those territories have recently made certain increases in fares "and are now undertaking such other upward revisions therein as they deem practicable, but since they contemplate no changes which would violate any outstanding order of the commission, they make no proposals herein with respect thereto." The passenger rates sought are shown in the table.

No Adequate Return for Several Years

The petition, after its opening reference to the present critical situation, asserts that for the past several years rates and fares have not yielded and do not now yield sufficient revenue, over and above operating costs, to in-

	Eastern		South Eastern		Western	
	Present	Proposed	Present	Proposed	Present	Proposed
				Effective November 1		Effective after Jan. 1
First Class one way	3	no change	3	no change	3	no change
First Class round trip	3	no change	2¼ 15 day limit	no change	2¼ 30 day limit	no change
First Class round trip	—	—	2¼ 6 mo. limit	—	2¼ 6 mo. limit	2¾
Transcontinental one way (tourist sleepers)	—	—	—	—	2	2¾
Transcontinental round trip (tourist sleepers)	—	—	—	—	1.8 to 2	no change
Coach one way	2	2½	1½ on majority 2 on others	2	2	no change
Coach round trip	2	2½	Same as above	2	1.8	1.9
Coach (Transcontinental) one way	—	—	—	—	1½	1¾
Summer First Class round trip	2.88 to certain points	not yet considered	2.1 to 2.88	not yet considered	1½ to 2	1.6 to 2.1
Summer Coach round trip	—	—	—	—	1½ to 1.8	no change
Winter First Class round trip	2.88	not yet considered	2 to 2.88	not yet considered	2 to 2½	no change
Winter Coach round trip	—	—	1½ to 2	2	1½ to 2	1½ to 2.1

increases in rates." If the commission should act favorably on the whole new proposal it is estimated that the yield therefrom would be about $507,000,000 a year, $48,500,000 of which would be from passenger business.

The 15 per cent increase would apply to all freight rates and charges (including those increased in Ex Parte 115), except charges for protective service to perishable freight and rates on a few other commodities increases on which would be subject to maxima as follows: Bituminous coal and coke, 15 cents per net ton, except where in Ex Parte 115 the increase was 15 cents the

sure the ability of the railroads "to continue in the public interest the adequate and efficient service contemplated by section 15a of the Interstate Commerce Act, notwithstanding the fact that during all of said time their management has been honest, efficient and economical."

The increase in traffic since the low point of the depression in 1932 has been accompanied by such increases in costs of operation, "brought about by increases in prices of materials and supplies, in rates of pay for labor and taxes, that petitioners have been unable to improve their financial condition during said period." The $726,-

583,000 net railway operating income for the year ended June 30, the best since 1930, was "barely sufficient" to meet that 12-months period's fixed charges of $641,000,000, and if present cost conditions and prospective January 1, 1938, tax conditions had then prevailed the net railway operating income for that 12 months ended June 30 would have been only $480,885,000—"far from sufficient to meet fixed charges"—even though the Ex Parte 115 increases were in effect. As a matter of fact, the petition continues, when full effect is given to the Ex Parte 115 increases, the general freight rate level, as measured by ton-mile earnings, "is substantially lower than it was in 1933, and the present passenger fares also show a substantial reduction."

Of the increases in operating costs since May, 1933, "approximately $357,381,000 or well over one-half of the total, is the result of developments that have occurred since April 1, 1935, which was after the date of the first report of the commission in Ex Parte 115." Figures on investment, net railway operating income, rate of return and net income or deficit after fixed charges are given for all years since 1932 and for the first nine months of 1937. The net income for the latter period is estimated at $77,000,000, and the rate of return 2.47 per cent. The highest rate of return shown is that for 1936—2.57 per cent. Deficits after fixed charges were reported for the years 1932, 1933 and 1934, while the 1935 net income was only $7,539,127; in 1936 it was $164,630,041.

Resultant Railway Buying Would Aid Recovery

The petition states that the proposed increases will not result in unreasonable rates, "will not bring about any undue disturbance in business conditions and will not result in a loss of traffic to petitioners to an extent that will deprive them of benefit therefrom in the way of a substantial net increase in revenue; but that, on the contrary, because of their effect in increasing railway purchases and employment, said increases will result in stimulating business and employment in general and thus greatly aid recovery."

In closing the petition asks special permission to make the increases effective by publication of special supplements on less than the statutory notice period of 30 days; also, it seeks a general order modifying all outstanding orders to the extent necessary to enable the roads to make the increases effective. Finally, fourth section relief to the extent necessary to establish the rates is also asked.

In announcing the action taken last week in Chicago by the Association of American Railroads, John J. Pelley, president of the association, said:

"This action has been forced upon the railroads because the margin between income and operating expenses has been squeezed so thin that railroads face a real crisis. Because there is no other way to meet this crisis than to make a general increase in rates and fares, the rail roads will ask the commission to expedite consideration of this matter.

Operating Costs Increase $663,303,000 Annually

"Facing the railroads today is an increase in operating costs totaling $663,303,000 annually, since early in 1933. Of that amount, more than one-half results from new taxes under laws passed by Congress and from a 40 per cent increase in the prices of materials and supplies and fuel which the railroads use. The rest is due to restoration in 1935 of the 10 per cent wage deduction originally made in 1932 and to recent wage agreements with the operating and non-operating unions, following mediation under the Railroad Labor Act by the National Mediation Board.

"The average revenue per ton-mile and per passenger-mile has steadily declined since 1921, until today railroads haul a ton of freight one mile for an average of less than a cent, and carry a passenger a mile for less than two cents. Only by increasing efficiency in all directions, and reducing costs of operation, were the railroads able to carry on in the face of reductions in revenues to these levels. They have shown striking progress in making transportation more efficient, more economical, safer and more serviceable. They have run longer trains where traffic justified them, and have increased the average speed of all their freight trains by 50 per cent. They have abolished general car shortages, not by increasing the number of cars, but by the more efficient and better co-ordinated use of an actually reduced number of cars. They have immensely bettered their passenger service. While improving the service they have produced it more cheaply and sold it at a lower average price.

Prosperity Net Income Only Four Per Cent

"Even during the period of great general prosperity, the net income of the railroads, available for interest on debts, dividends to stockholders, and improvements to their properties, averaged only about 4 per cent on their investment. There was small chance, under these conditions, to retire indebtedness or to accumulate reserves for the depression years which were to come, even had the stockholders during the good years foregone entirely any dividends upon their stock. There was no boom for the railroads.

"Because of that situation, the railroads went into the depression without surplus reserves.

"During the depression years, they faced a still more difficult situation. As costs of all sorts—materials and supplies, taxes, wages—rose from depression low, the railroads were not able to meet the rise by following the lead of other industries. They could not increase the price of their product—transportation.

"Instead, the revenue for hauling a ton of freight one mile, or carrying a passenger a mile, continued to decline, and stands today at 10 per cent less than it was even at the low point of the depression.

"The public has enjoyed lower transportation costs and better service but the total net income earned by the railroads, available for interest, dividends, improvements and reserves, was only 2.57 per cent on their investment in the year 1936. In the first eight months of 1937 it was but 2.56 per cent. An industry operating on a margin so thin as that, even after the great progress in cost reduction which it has made in recent years, is in no position to stand substantial increases in its operating expenses without increase in revenues.

Ninety-Six Railroads in Receivership

"Ninety-six railroad companies are now in the hands of receivers or trustees, and are being operated under the supervision of the courts, because they have found it impossible to meet their obligations. These companies operate 71,386 miles of railway line, or 28.1 per cent of the total railroad mileage of the United States. This is the largest percentage of mileage ever in the hands of the court at any one time in the history of American railroads.

"This is a clear indication that even without the large

(*Continued on page 655*)

Would Have I.C.C. Disapprove M. & St. L. Dismemberment

Assistant Finance Director Boles finds that R.F.C. plan is not in the public interest

WASHINGTON, D. C.

FINDING that the consummation of their plan would not be in the furtherance of the public interest and would not be in line with the commission's plan for consolidation of the country's railroads, Assistant Director C. E. Boles, of the Interstate Commerce Commission's Bureau of Finance, in a proposed report to the commission, has recommended that it deny the application of Associated Railways to acquire the properties of the Minneapolis & St. Louis and its receivers, and the application of the Chicago & North Western and its receivers, the Chicago, Burlington & Quincy, the Chicago, Milwaukee, St. Paul & Pacific and its trustees; the Rock Island & Pacific and its trustees; the Great Northern; the Illinois Central, and the Minneapolis, St. Paul & Sault Ste. Marie to acquire parts of the properties of the Minneapolis & St. Louis. The case, Finance Docket No. 10497, arose as a result of a suggestion of Chairman Jones of the Reconstruction Finance Corporation in 1935, in which he proposed to these trunk-line roads that they take over the various segments comprising the system of the Minneapolis & St. Louis which was then in receivership and had been for the past 14 years. Mr. Jones advanced this idea of dismemberment of the M. & St. L. as the only way in which the railroad could be saved from eventual total abandonment.

In reality, the proposition was for the R.F.C. to loan to the purchasing lines the sum of $7,500,000 with which they would buy certain parts of the M. & St. L. system and issue bonds against these purchases and deposit them with the R.F.C. as collateral for the loan. To accomplish this scheme, the applicants set up a new corporation which was known as the Associated Railways. Under the proposed plan the Associated would acquire the lines of railroad and other properties of the M. & St. L. at a foreclosure sale, paying $7,200,000 plus the amount remaining due on equipment trust certificates of the M. & St. L. and its receivers. Following this purchase, the Associated would sell various portions of the lines to the other applicants, the trunk line roads, either solely, or in some cases to two or more of them as tenants in common. With the exception of the Minneapolis terminals of the M. & St. L., the several segments of property would be incorporated in, and operated by the trunk lines as parts of their systems. The Minneapolis terminals were to be owned by the trunk lines, except the Great Northern, in equal portions, and were to be operated by the Associated under an operating agreement. All those lines not taken over by the applicants would be abandoned.

To provide funds for the purchase of the properties, the Associated proposed to execute and deliver a mortgage securing bonds, in series, in the amount of $7,200,000 to mature in 10 years and to bear interest at the rate of 4 per cent, each series to constitute a separate lien upon one of the portions of the railroad or undivided interest therein or interest in the terminals to be sold or conveyed by the Associated. These bonds would have been sold at par to the Reconstruction Finance Corporation or used as collateral for a loan from the R.F.C., which had made a tentative commitment to lend $7,200,000 to the carriers participating in the plan. Also, each of the applicants agreed to execute and deliver to the R.F.C. an instrument guaranteeing without restriction the principal of and interest on the bonds to be secured by the property conveyed to it or by its undivided interest in the property.

The amount of the bonds to be assumed by each of the carriers, which was also the gross purchase price for the property to be acquired by each, was as follows: North Western, $1,231,833; Burlington, $1,301,833; Milwaukee, $1,963,833; Rock Island, $1,129,833; Illinois Central, $1,165,833; Great Northern, $107,000; and the Soo Line, $299,833. The proposed report also points out that in addition to assuming the bonds of the Associated it might be necessary for the applicants to pay $6,000,000, or more, under the terms of an agreement of May, 1936, between certain carriers and the railway labor organizations providing for allowances to employees affected by the co-ordination of railway facilities. It is also stated by the proposed report that an application for approval of a loan of $7,500,000 by the R.F.C. to the Associated is pending before the commission in Finance Docket No. 11,131.

To defray the expenses of organization and to provide for working capital, the Associated proposes to issue 80,000 shares of common stock with a par value of $1 a share, which would be sold at par for cash in equal amounts to the North Western, the Burlington, the Milwaukee, the Rock Island, and the Illinois Central. Also, the proceeds from the abandoned lines and from the sale of rolling stock, including that subject to the equipment trust certificates, and from the sale of other property, except the line from Marietta, S. Dak., to Watertown, would be divided and distributed equally by the Associated among its five proprietary companies and would be applied by each of them to the reduction of the principal of the bonds constituting a lien on the properties conveyed to it, or paid over directly by the Associated to the R.F.C. and credited on bonds assumed by each of them.

Issues Are Pointed Out

Before taking up a detailed description of the lines to be acquired by the various carriers and the lines to be abandoned, Assistant Director Boles points out that the only issues in the case are whether the proposed purchase by the Associated of the properties of the M. & St. L., the proposed purchase of parts thereof, and the acquisition of control of the Associated by purchase of stock of that company by the other applicants, and the proposed operation of the terminal properies by the Associated will be in harmony with and in furtherance of the plan of consolidation of the commission as set out in section 5 (3) of the Interstate Commerce Act, and will

promote the public interest; whether the present and future public convenience and necessity require or will require operation by the North Western under trackage rights over the line of the Rock Island, as proposed, and will permit the proposed abandonment of various lines and abandonment of operation under trackage rights over various lines; and whether the proposed issue of securities and assumption of liability meet the requirements of section 20a of the Act.

In this regard, he points out that the M. & St. L. was assigned to System 10-Illinois Central, and that the proposed plan is, therefore, not in harmony with or in furtherance of the plan of consolidation. To overcome this objection, the applicants filed a petition for an amendment of the plan of consolidation so as to allot the various portions of the M. & St. L. in accordance with their proposals.

One-third of Mileage to Be Abandoned

After a lengthy description of the M. & St. L. and the effects of the proposed dismemberment, Mr. Boles concludes that it would result in the immediate abandonment of approximately 410 miles of railroad, or nearly one-third of the mileage of the M. & St. L., leaving without rail service 42 towns and villages having a total population of 7,905 in 1930. He also finds that at practically all of these places there are grain elevators and in many of them there are coal dealers, bulk oil stations, and lumber dealers. Most of the elevators would be a total loss, he says, and most of those engaged in the other businesses mentioned would have to go out of business or move to other locations with considerable loss of investment. He also thinks that as in the case of all abandonments, those left without the service of the railroad would suffer considerable inconvenience with the values of property being depreciated and the cost of transportation increased.

In the opinion of Mr. Boles, many existing routes and channels of trade would be disrupted by the abandonment of the various segments and the acquisition of others by the trunk lines. The chief routes are those from Minneapolis to Peoria, St. Louis, Kansas City and Omaha. According to the report, there would be little, if any, disturbance of interstate rates, but many increases in intrastate rates would result between points on the M. & St. L. In some instances these increases would be detrimental to shippers and receivers of freight at such points, but he also mentions the fact that there would be many reductions in intrastate rates between points on segments of the M. & St. L. lines to be acquired by the participating carriers and points on their lines. This, in his opinion, would have a natural tendency to divert traffic from certain markets in Iowa and South Dakota to other markets.

The report also reaches the conclusion that the consummation of the plan would require the dismissal of about 2,000 employees of the M. & St. L., being approximately two-thirds of its present force. Also it might require a reduction in forces of some of the participating carriers, namely, the Milwaukee which proposes to give less service on its so-called river line if the plan becomes effective.

The writer of the proposed report would have the commission find that the proposed plan is not in accordance with its plan of consolidation of railroads of the country in that it dismembers a system which has already been allocated to system No. 10—the Illinois Central—and gives parts of the dismembered road to other trunk-line carriers. To agree to the plan, says the report, the commission would have to revise its plan of consolidation as requested by the carriers in their petition to the commission. But in modifying the plan, the commission must observe the requirements of section 5 (3) of the Interstate Commerce Act, one of which is that in the division of railways into systems under a plan of consolidation, competition shall be preserved as fully as possible, and wherever practical existing routes and channels of trade and commerce shall be maintained. Mr. Boles says that the record shows that the carriers "in making allocation of the various segments of the railroad did not attempt to preserve competition, but rather to prevent competition or remove it. For example, the Burlington is to acquire the line from Peoria to Tracy, because it has other lines in the same general territory, and the Milwaukee is to take over the line from Hopkins to Hanley Falls, which closely parallels one of its own lines. They did not attempt to preserve existing routes and channels of trade, but rather to close such routes and channels where they had competing routes. The record shows that the M. & St. L. route from Minneapolis to Peoria has been useful in the past in relieving congestion at Chicago, and that its routes to the Southwest have at times been needed to carry the traffic. The elimination of competitive routes would be contrary to the commission's established policy of encouraging alternate routes and gateways in order to relieve present and prospective congestion at the great railway meeting points."

In the opinion of the author, the only justification for the plan is to be found in the contention of the applicants that the M. & St. L. cannot be continued as an independent carrier and that unless the plan is approved, it will ultimately be necessary to abandon more mileage with greater loss to those now served by the railroad and greater loss of employment. The proposed report also contends that the applicant carriers have failed to show that the M. & St. L. as an operating unit is in any immediate danger. "Like other roads," it says, "it has curtailed expenditures during recent years, but no more so proportionately than other railroads. Deferred maintenance exists on many of its lines, but the amount required to overcome it would not be nearly so great for continued operation by the M. & St. L. as the applicants find would be necessary according to their standards. To show results of operation the applicants have used a period in which the country has witnessed the worst business depression in its history and in which the territory served by the M. & St. L. has suffered not only from the general effects of the depression, but also from the worst droughts, dust storms, and visitation of pests in its history. These things have reduced not only the outbound tonnage of agricultural commodities on which the railroad must depend for a large percentage of its revenues, but also the inbound tonnage which depends in large measure on the prosperity and purchasing power of those in the territory served."

Cannot Predict Road's Future

The author of the report is also convinced that the "M. & St. L. has been under great handicap because of inefficient operation. Most of these handicaps have been removed. Its management and operating efficiency have been greatly improved. With the expenditure of considerable money greater operating efficiency can be attained. There was a great increase in M. & St. L. traffic and revenues in 1936, the co-receivers being able to show net railway operating income of $728,492 as compared with $101,501 for the preceding year, notwith-

standing an increase of nearly $200,000 in expenditures for maintenance of way and structures, and of approximately $211,000 in railway tax accruals. No one can say what the future holds for the M. & St. L. or any other railroad, but it is reasonable to assume that its earnings have touched bottom, and that in the future with the return of normal economic and weather conditions, it will be able to show net railway operating income of at least $500,000 or $600,000 a year. On this amount the railroad can safely be reorganized." The proposed report is brought to a conclusion with criticism of the railroads for failure to make a survey of the effects of the acquisition of the various segments and the loss that would be entailed by them if they continued to operate the lines which are proposed to be abandoned. It is pointed out that the usual issues presented in an abandonment case are whether the loss and inconvenience to the public outweighs the burden of its continued operation on the railroad's system as a whole. "In this case," the report says, "the commission is asked to determine whether the continued operation of certain segments will burden certain carriers that have no present interest in such segments and are merely speculating on whether their operation would be a burden."

According to Mr. Boles, "the applicants have failed definitely in some cases to show that continued operation of segments would burden their existing systems. In most cases they have not even estimated what revenue the traffic from the segments, if operated as parts of their systems, would contribute to them. They have shown what the segments contributed to system lines of the present owner, but the present owner is not seeking to abandon the segments and is not trying to abandon them because of any burden that might be imposed on its system as a whole. Furthermore, in seeking to show that the several segments would be a burden to the several systems, the applicants have used earnings for a period when traffic was extremely light because of adverse conditions in the territory served."

It is expected that several months will elapse before Assistant Director Boles' 400-page proposed report will be acted upon by the full commission in view of the fact that briefs must be filed and oral arguments held before a decision can be reached.

How Business Views Rate Increase

Editors of business journals express opinions on rates and wages which mirror beliefs of railway patrons

BELIEVING that the opinion of railway patrons as to the wage and rate policies of the rail carriers is of vital importance to the railroad industry, and that the business publications in a given industry are accurate reflectors of preponderant opinion therein, the *Railway Age* asked leading business paper editors to express their opinions on recent railway wage increases, and the rate increases which must be a sequel to the wage policy. The opinions of these editors are set forth in the following. In most cases they did not authorize us to quote them by name—hence we do not show either their names or the publications with which they are connected, but only (in italic side headings) the industries which the publications serve. Where a paper had published an editorial opinion on the question we quoted therefrom without seeking a further expression from the editor. And, in the few cases where our correspondents authorized us to quote them directly, we have identified them.

Little Opposition to Higher Rates

Business opinion, as reflected in these letters, appears to be acquiescent to a reasonable increase in rates—although many of the editors plainly suspect that the railway unions are overdoing a "good thing" in their wage policies; and that they, the railroads and consumers generally may suffer thereby. But here are the opinions in the editors' own words:

Unions Forcing Railroads into Museum

Petroleum.—(From editorials in "National Petroleum News").—The railroads certainly are paying heavily enough for their third of a century of government regulation. They slept under the political caress, dreaming that they were safe from competition and that the government would see to it that they did not indulge in unprofitable "unfair practices" against each other and that their rates were kept high enough to let them live.

While the roads dreamed thus, other means of transportation developed. Thanks to the high rates that the roads maintained on oil, undoubtedly to protect their largest shippers, the roads have lost to truck, barge, tanker and pipeline most of the oil business. Since that business has gone they have been frantically getting their, or the government's fingers on these means of moving merchandise so they would not harm the roads so much. But the high rates of old still obtain on petroleum and its products.

Now a small group of refiners in the Mid-Continent announce plans for construction of another gasoline pipeline to the big consuming markets up north. That means more business that will be lost to the railroads.

Government control and regulation seems to stifle an industry's thinking and doing.

We further point to the forthcoming 70-car train as determined by those eminent railroad experts (?) the members of the United States Senate. So we ask you to rise to the toast of the 69-car train and the great inroads the 69-car train will make on unemployment. Then we ask you to look way down the future and vision the one-car train, with a locomotive twice as big as the biggest today. Just think of the unemployment that will relieve —providing that single car train isn't the only train in existence and not in the Smithsonian Institute at Washington as a monument to the economic and engineering astuteness of our statesmen.

The oil industry is fast getting its products off the rails just because the combination of government and

union management of the roads has made transportation costs too high.

Traffic Publication's Censure Is Severe

Traffic Management.—(From an Editorial in "Traffic World").—The facts are that the men deserved nothing and that the railroads cannot afford to pay any sort of increase; that the men did not expect twenty per cent and are tickled to death with what they got, and that the railroads are now at least $35,000,000 a year nearer to bankruptcy and government ownership. We say "at least" because, doubtless, they will, if there are opportunities for doing so, increase the pay of employees not included in the union demands but who are entitled to the same pay that union employees get for comparable work. That is what they did when they recently met the request of the non-operating brotherhoods for an increase of twenty cents an hour by voluntarily giving five cents, or $98,000,000 a year.

They publicly give no reason for their yielding in either case. The reason of course, is cowardice. Their own organ is at pains to show that fear—fear that something worse might happen if they did not yield—is responsible for their action. That is always their reason; they yield to unfair demands—and then they keep on complaining about what the government is doing to them.

The railroads are expected soon to ask for an increase in rates. In their petition, the upwards of $135,000,000 a year additional wages they have just agreed to pay will figure as a reason for relief. Of course, they are paying these wages and their expense sheets reflect that fact; if they had been forced to pay them, the high wages would afford a good argument for higher rates—but what sort of showing will the railroads make when they admit—as they will have to admit, if questioned—that they paid the wages merely because they feared, if they did not pay, they might be forced to do something worse?

Electric Power.—It is my personal feeling that the freight rates should rise if that is necessary to enable the railroads to meet costs. We realize, of course, that higher freight rates will mean, for example, a higher cost of coal, but that this should not be objected to as far as it is reasonable and necessary. I imagine that many of our readers would take the same view.

Soap Manufacture.—In the movement of freight to and from soap industries and especially the shipment of raw materials from the seaboard to the interior, I cannot but see how there can be anything else but higher freight rates on soap and its raw materials as a result of this material wage increase.

Sees Loss of Jobs to Railroad Labor

Meat Packing.—(By Paul I. Aldrich, Editor, The National Provisioner).—Meat packers watch with concern the increasing cost of services they must buy from other industries. The spread between what the farmer receives for his livestock and what the consumer pays for meat is invariably a subject of discussion. Yet rising costs, due to increased taxation at every step in the line of manufacture and distribution, combined with increased labor costs, constitute the principal part of this spread.

Now railroad labor, already the highest paid in any industry, has been granted a still higher rate. It is a well recognized fact that earnings of railroads are not sufficient to absorb this increase under present freight rates and higher rates will be sought. This means that already high transportation charges for livestock and meat will be still further increased.

It is such increased costs that force not only meat packing but every industry that handles a necessity to search for less expensive means of transportation. Wherever this is done it means less volume for the railroads and need for less labor.

From 38 to 40 million head of livestock are shipped for slaughter annually to the 69 principal markets of the country, and from 10 to 12 billion pounds of meat is transported from packinghouses to consumers each year. This requires an enormous transportation service, a considerable percentage of which already has been diverted to trucks in an effort to reduce distribution costs. Another increase in freight rates is pretty sure to divert a still larger percentage of this traffic from the railroads to less expensive means of transportation.

It would seem that railroad employes might well take a lesson from coal miners whose many demands increased costs to a point which stimulated the search for substitute fuels, which proved sufficiently successful to result in the unemployment of great masses of labor in the coal fields.

Because it furnishes the public with one of its major foods, the meat industry looks with regret on the demand for wage payments beyond the means of an industry to provide, and believes that the welfare of all would be better served if broad employment at a fair wage and larger volume at a reasonable price constituted the economic theory on which labor based its demands.

"Reactionary Executives" Blamed

Chemical Manufacture.—It would seem as though the increase in the quantity of goods being moved by the railroads, and the lower present cost of money should have been enough partially to off-set the wage increases. However, the complicated structure of railroad finance and intrinsic inefficiencies of rail transportation seem long to delay beneficial effects of this sort. The whole matter is ensnarled in a legalistic procedure of I.C.C. Simplification or technologic progress is smothered by ritual. Some of the I.C.C. staff, and some railroad executives, seem to appreciate and resent this, but they do not make policy decisions. And if they are not careful they will resent themselves right out of a job.

The railroads are undoubtedly one of the principal objectives of New Deal attack. Some of the Brain Trust group believe that they can now nationalize as the first step toward their objective of greater business ownership and control of American activities. But this trend would be probably successfully opposed in Washington since it is not welcomed either in Congress or at I.C.C., were it not for the fact that certain of the old-school executives of the rail system themselves continue to harp on that problem. To an outsider who knows very little of the inner workings of the rail organization it appears as though these reactionary executives were really the worst enemies of the transportation agencies of the country. They are "practical" men who resent progress of technologic or service type almost as much as they resent the government's intrusion into their business.

Factory Operation and Management.—I have frequently taken the stand against attempting to legislate either purchasing power or prosperity—have pointed out that all we can hope to distribute is what industry actually makes in goods and services—and that out of balance wages in favor of a specific group must necessarily work hardships on other groups.

Engineering and Construction.—My personal opinion

as a former railroad man is that the employees have made a serious mistake in pressing for wage increases because they only help to divert traffic from the railroads to motor vehicles, but they appear to be blind to this possibility.

Coal Mining.—I think increased rates on coal would be unwise both from the standpoint of the industry and of the railroads.

Electrical Construction.—I believe that a large number of our readers, and especially those associated with the more substantial electrical dealers and contractors, recognize two facts in relation to the railroad industry which vitally affects their business. First, I think that most of them recognize the fact that increased wages in any industry means more business ultimately for the merchandiser as well as for the construction industry. Second, I think that most of them realize that it is not a healthy condition for any large industry to find it necessary to operate continuously at a loss, to say nothing of being unable to even earn interest on its bonds. Certainly, no straight thinking man favors governmental ownership of any of our large industries and if increased freight rates are necessary to prevent it, they must be accepted as inevitable.

Iron and Steel Manufacture.—We feel that the wage demands among railroad employes as well as many of the recent demands made by industrial employes are excessive under conditions existing today. It would have been much better if these could have been adjusted in a more orderly way and more gradually.

As for freight rates, I think most shippers realize that with the increased wage rates and other increased costs, the railroads must have more income in order to continue to give good service. On the other hand if the rates are too high it will chill the urge to ship by rail and probably will encourage further diversion to trucks and other forms of shipping.

The whole railroad situation is one of extreme difficulty. I think industry as a whole sympathizes very much with the plight of the railroads and would like to be helpful in many respects.

Market Drop Measures Harm Done to Business

Electric Power Production.—I feel that this, along with a lot of other drives for unreasonable wage increases, is bound to be an injury to business and in the end, to wage earners themselves, since prices and cost of living must increase as wages are boosted and probably will go up faster than the wage increases.

Furthermore, the destruction of investment values seems to be well under way according to the indications of the present stock market, and I can see no possible chance for any change until there is a let-up on the burdens which are being placed upon business in all directions.

Laundry Industry.—We feel rather strongly that the unions, in alliance with the Administration, have driven wages in many instances to high artificial levels which cannot possibly benefit either wage earners, business, or the general public. Railroads, no doubt, have suffered more in this respect than many other industries. It seems to be pretty common knowledge that freight rates must go up sharply if the roads are to remain in private ownership and meet the demands made upon them. If one really studies cause and effect, he is bound to come to the conclusion that in the long run not all the government pressure or union bludgeoning can suffice to increase annual wages. They may take from some and give to others at the expense of creating more unemployment, but after all, the production output of the worker in the end must control his wages.

Fire and Casualty Insurance.—Insurance companies are extremely interested in the welfare of the railroads because of their heavy investments in railroad stocks and bonds. Surely, railroads cannot operate at a loss and continue in business. Nor can they operate at a profit if the burden of earnings distribution to employees becomes heavier than the traffic will bear.

Higher Rates Justified

Machine Manufacture.—(By Eric Oberg, Editor, "Machinery").—I feel that the present tendency to increase wages in the railway field, as well as in other industries, without reference to the income of the employing corporations and their ability to pay higher wages, is basically wrong. Obviously there must be a relation between freight rates and passenger fares of railroads and the income or wages of those who render service. During the last couple of years, for example, most of the larger railroads have improved coach passenger accommodations to a point where they are equal to Pullman comfort, while at the same time fares have been reduced to almost one-half of what they were.

It is evident that business and individuals must both expect to pay higher freight rates and increased passenger fares when the railroads have to pay higher wages.

Hotels and Restaurants.—It is my personal opinion that railroad employees have the rest of us by the seats of our pants. If all industries had the same stranglehold we might as well stop trying to do business.

Water Supply.—The whole matter of rising operating costs to public carriers without offsetting income increase has the earmarks of bringing on failures, whether premeditated or not.

Food Processing and Distribution.—Organized labor has been receiving some very, very poor economic advice.

Cleaning and Dyeing.—The situation with reference to the railways is only one of a very large number of attitudes assumed by the federal government which must be changed if we are to keep the business structure of this country intact. I see nothing but utter chaos ahead of us unless recognition is taken by the government of two simple fundamental facts:

One: Business must be permitted to make a profit. This obviously includes the railways.

Two: Federal control or government ownership, or bureaucratic management of any enterprise in this country is doomed to failure before its start.

I do think that the railroads have a job to do themselves in slowly, gradually convincing the public, if there is a basis on which to convince them, that the excessive capitalization of former years—in short, watered stock—has been eliminated from their capital structures.

THE LATEST IN THE LIST OF TRIBUTES afforded "soulless" railroad corporations for services rendered in time of distress is that paid recently to the Canadian Pacific by a community of Mennonite farmers at Coaldale, Alberta, according to the Canadian Pacific Staff Bulletin. At a gathering of over 800 members of the sect, held in the community hall, illuminated addresses were presented to Sir Edward Beatty, chairman and president of the C. P. R., and Col. J. S. Dennis, formerly commissioner of colonization for the road. During the ceremony, J. B. Janz, leader of the community, related how, in the Russian revolution, 20,201 members of the religious body were driven from their farm lands in southern Russia by the Soviet regime and, arriving at Canada in a poverty-stricken state in 1927, were transported to Alberta by the C. P. R., at the behest of Sir Edward and Col. Dennis, and there settled through a loan totaling $2,400,000.

Eight Months Buying Increases 34 Per Cent

RAILWAY buying in the month of August, based on reports from 77 railroads, totaled approximately $61,929,000 for materials and supplies, exclusive of fuel, and $7,660,000 for new locomotives and cars ordered from builders, making a total of purchases from the manufacturing industry of $69,589,000. Purchases of fuel were $21,212,000, making total purchases approximately $90,801,000. This was a decline of about $2,000,000, or 2 per cent, from the July purchases of materials and supplies, an increase of $7,000,000 in equipment buying and a $500,000 decrease in expenditures for fuel. The net result was to increase total expenditures for supplies, equipment and fuel about $4,700,000, or 5 per cent, over July, while making no significant change in the combined buying from manufacturers.

Based on present estimates, the buying from manufacturers in August was 34 per cent larger than the corresponding buying in August, 1936. This was a decline relatively from January and February when the buying from manufacturers showed a 108 per cent increase over the corresponding months of the previous year, and also a decline relatively from March when expenditures were 93 per cent over March, 1936, but a gain relatively over May and June when buying from manufacturers was less than in 1936. The total expenditures with manufacturers during the four months from May to August of this year were 8 per cent larger than the dollar volume of expenditures in the same period of 1936, as compared with an increase of 74 per cent in buying during the first four months of 1936.

The preliminary figures for August brought railway buying for the eight months to approximately $495,440,000 for materials and supplies, exclusive of fuel; $122,080,000 for new equipment ordered from builders, and $188,157,000 for fuel—a total of $617,520,000 of materials and equipment, exclusive of fuel, from manufacturers, and a total, inclusive of fuel, of $805,677,000. The eight months' totals show a 42 per cent increase in expenditures for materials and supplies, exclusive of fuel, over the first eight months of 1936, and a 22 per cent increase in the value of orders placed with builders for new equipment, or a combined increase of 37 per cent in expenditures for supplies and equipment, exclusive of fuel, from manufacturers; while the total including fuel for the eight months is an increase of 30 per cent over the first eight months of 1936.

Purchases of Material, Exclusive of Equipment—8 Months*

1937	Fuel (000)	Rail (000)	Crossties (000)	Other Material (000)	Total (000)	Total less fuel (000)
January	$26,032	$3,154	$3,898	$46,536	$79,620	$53,588
February	26,160	3,891	3,389	45,068	78,508	52,348
March	30,505	6,275	4,999	55,646	97,425	66,920
April	19,632	5,386	5,132	56,166	86,316	66,684
May	20,473	5,043	5,026	53,968	84,510	64,037
June	22,426	5,804	6,035	54,422	88,687	66,261
July	21,717	4,118	5,863	53,692	85,390	63,673
August	21,212	2,689	5,990	53,250	83,141	61,929
8 Months	188,157	36,360	40,332	418,748	683,597	495,440
1936						
January	21,859	1,107	3,027	29,656	55,649	33,790
February	24,355	2,426	2,371	29,146	58,298	33,943
March	22,304	4,208	3,312	36,611	66,435	44,131
April	20,626	5,504	3,867	39,553	69,550	48,924
May	19,447	5,700	4,112	41,859	71,118	51,671
June	19,368	3,836	4,150	38,194	65,548	46,180
July	20,086	1,879	4,137	38,882	64,984	44,898
August	20,281	1,911	4,110	38,660	64,962	44,681
8 Months	168,326	26,571	29,086	292,561	516,544	348,218

* Subject to revision.

Purchases of Supplies and Equipment from Manufacturers—8 Months*

	Materials† received from mfrs. (000)	Equipment ordered from mfrs. (000)	Total from mfrs. (000)	Fuel (000)	Total including fuel (000)
1929	$647,701	$295,784	$943,485	$226,399	$1,169,884
1930	548,446	127,615	676,061	209,954	886,015
1931	341,864	25,273	367,137	164,136	531,273
1932	187,700	1,940	189,640	118,000	307,640
1933	159,599	4,207	163,806	116,940	280,746
1934	287,590	59,031	346,621	138,065	484,686
1935	243,340	23,632	266,972	156,210	423,182
1936	348,218	100,736	448,954	168,326	617,280
1937	493,440	122,080	617,520	188,157	805,677

* Subject to revision.
† Includes rail and forest products.

	Supplies and Equipment from manufacturers 1936 (000)	1937 (000)	Per Cent Increase Months	Accumulative
January	$38,559	$80,040	108	...
1 month	38,559	80,040	...	108
February	40,498	84,068	108	...
2 months	79,057	164,108	...	108
March	46,804	90,490	93	...
3 Months	125,861	254,598	...	102
April	72,679	91,434	26	...
4 months	198,540	346,032	...	74
May	73,346	68,975	—6	...
5 months	271,886	415,007	...	53
June	72,184	68,486	—5	...
6 months	344,070	483,493	...	40
July	53,095	64,438	21	...
7 months	397,165	547,931	...	38
August	51,789	69,589	34	...
8 months	448,954	617,520	...	37
First 4 Months	198,540	346,032	74	...
Second 4 Months	250,414	271,488	8	...
8 Months	448,954	617,520	37	...

Subject to revision.

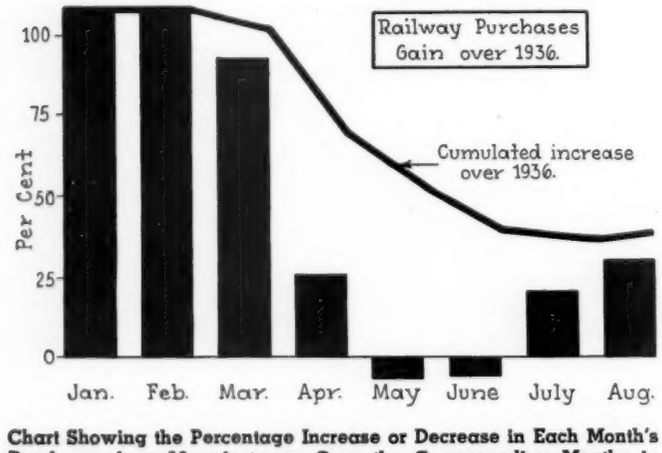


Chart Showing the Percentage Increase or Decrease in Each Month's Purchases from Manufacturers Over the Corresponding Months in 1936 and the Trend of the Accumulated Total per Month as Compared With 1936

TWO DIESEL-ELECTRIC semi-articulated trains, each comprising two power-cars and two trailer-cars, all of electrically-welded steel construction and partially streamlined, have recently been placed in operation by the Danish State Railways, according to "Modern Transport" (London). To make possible either-direction operation, a power car provided with two 275 hp. Diesel engines and two generators resting on the end truck has been placed at each end of the train. Each power car is articulated with its respective trailer on a common truck, while the two-car units are permanently coupled to form the complete four-car train. The articulated trucks carry the traction motors. Providing accommodation for a total of 222 coach passengers, 42 first-class, the train is outfitted with a kitchen and dining section seating 16 persons which occupies one of the power-cars.

A.A.R. Adopts Association of Railway Electrical Engineers

Two electrical groups hold joint meeting—New set-up approved 1922, consummated 1937

THE 26th annual convention of the Association of Railway Electrical Engineers and the sixth biennial meeting of the Electrical Section, Engineering Division, A.A.R., were held October 27 and 28 in the Sherman Hotel, Chicago, Ill. Subjects of mutual interest to the two groups were discussed in joint session, while subjects of specific interest to each group were considered in separate meetings.

For some time, negotiations have been in progress for the inductance of the Association of Railway Electrical Engineers into the Association of American Railroads. At the opening session, these arrangements were consummated and the Association of Railway Electrical Engineers formally became "The Electrical Section, Mechanical Division, A.A.R."

Following the address of welcome by George T. Johnson, president of the Association of Railway Electrical Engineers, Secretary J. A. Andreucetti offered the following resolution:

"For the past twenty-nine years, the Railway Electrical Engineer has given our Association needed publicity and support. By publishing committee reports, it has assumed a substantial part of our printing costs, and it has consistently aided the Association to establish itself as an important adjunct to railroad operation.

"Now when the Association is to receive official recognition as the Electrical Section of the A.A.R., Mechanical Division, it seems appropriate that we offer the following resolutions:

"Be it resolved that the Association of Railway Electrical Engineers express its thanks for the many years of capable cooperation rendered by the Railway Electrical Engineer. The Association recognizes the fact that a representative publication is important to the development of electrical applications in railroad service, and it enjoins its members to continue to give the Railway Electrical Engineer their loyal support, that it may continue to serve the industry as it has in the past."

J. A. Andreucetti (electrical engineer, Chicago & North Western), who has been secretary-treasurer of the Association of Railway Electrical Engineers, since 1910, will continue as secretary of the Electrical Section, Mechanical Division. The Association was organized in 1908.

Joint Meetings

Illumination

Separate reports (essentially similar in content), prepared by the illumination committees of the two associations, were presented and discussed in joint session. The reports indicate that the 30- and 60-volt lamps for car lighting are finding favor as compared with the 32- and 64-volt lamps formerly used. The new lamps, now available at no increase in cost, make it possible to have well-lighted cars when the train is standing, and it is only necessary to adjust the lamp regulator to have them burning at proper voltage while the train is in motion.

Fluorescent lamps, while not yet out of the laboratory, are being considered for car lighting. It is possible with these lights to obtain as much as 30 lumens per watt in white light. This is more than twice the efficiency of the smaller sized lamps now widely used.

Attention is called to increased intensities, to many new fixtures being used, and more complicated wiring that is now required for car lighting. The reports make it apparent that lighting requirements for passenger cars are undergoing a radical change.

Discussion—The Engineering Division, Electrical Section, report on illumination was presented by H. F. Brown (assistant electrical engineer, New York New Haven & Hartford), chairman of the Section. The Electrical Section, Mechanical Division, report was presented by G. W. Bebout, electrical engineer, Chesapeake & Ohio. Mr. Bebout supplemented the report by telling of a plant of the International Nickel Company, in which a lighting intensity of 37 foot-candles was obtained on the working plane by means of a combination of Mazda and mercury-vapor lighting units. Mercury lamps, he said, cost three times as much as the incandescent, last three times as long and produce from two to three times as much light for the same power.

In response to a question by H. H. Helmbright, General Electric Company, J. A. Andreucetti explained that the test of car lighting lamps, referred to in the report, showed that the 28/32-volt lamps gave about 25 per cent more light than the 32-volt lamps when the car was standing. The life of the lower voltage lamp is reduced about 10 per cent, and the cost of the lamps increased accordingly. Mr. Helmbright produced figures to show that the cost of power on a railroad passenger coach is high and that maximum lighting economy is obtained by using relatively short-lived lamps.

George T. Johnson, assistant electrical engineer, New York, New Haven & Hartford, asked for information on sodium lamps for yard lighting, and Mr. Helmbright replied that the sodium light source is so large that it has not been considered practicable to develop it for projection units.

J. W. Foote, Niagara Junction Railway, reported that there had been no accidents on sodium-lighted crossings on his railroad and the indication is that they are a material aid to safety.

Replying to a question, John Carlson, chief electrician, New York Central, described an installation in a shop, in which two-thirds of the Mazda lamps are replaced with mercury-vapor units. The workmen, he said, liked the increased illumination, and do not object to the color.

A. P. Dunn, electrical foreman, Michigan Central, spoke of the difficulty he had experienced with mercury lights going out because of a drop of voltage, and re-

fusing to come on again for several minutes. Mr. Helmbright replied that the voltage must be kept quite constant and that a combination of mercury and Mazda assures against loss of light and improves color.

Electric Welding and Heating

The report of the A.R.E.E. committee on electric welding and the report of the Electrical Section Committee on electric welding and heating were presented and discussed in joint session. The former report describes an electronic rectifier arc welder suited particularly to fabrication and repair of light-gage metals. Space is also given to the use of adding metal by means of the metal spray. An important application is the metallizing of water tanks to prevent corrosion. Zinc is recommended for cold, hard water, lead or tin for closed heaters which have copper heating coils, lead or tin for hot-water tanks, aluminum, zinc, tin or lead for salt water, and lead for blow-off tanks in roundhouses. The process is also used for building up wearing parts.

A controller for a.c. welders is described, which permits increasing or decreasing the current values by means of two push-buttons mounted on the electrode holder.

Attention is directed to the desirability of planned maintenance for electric welding machines, as compared to the practice of repairing them only when they fail. The Electrical Section report recommends that all portable cords between the safety switch and the motor-generator set should consist of four-conductor cables, one of which is used as a ground. Allowable current for various sized welding cables is given in a table. This varies from 200 amp. for No. 2 cable to 550 amp. for 4/0 cable. Other recommendations for welding cable include extremely flexible cable for attaching the electrode holder, all-rubber insulation for welding cables, plug connectors which can be locked to prevent their pulling apart accidentally, cable reels to prevent kinking and to reduce abrasion, and good ground connections. Illustrations of recommended devices are included. Suggestions are also included for the use of helmets and shields for observers as well as welders, the avoidance of low-cut shoes and the desirability of otherwise protecting the body of the welder by high boots and leggings and suitable arm protection.

Discussion—The Engineering Section report on electric heating and welding was presented by J. M. Trissal, assistant engineer, Illinois Central. In presenting it, he said the committee is now making a study of reconditioning of flood-damaged equipment and is seeking information on methods for determining the condition of equipment. R. P. Winton, welding engineer, Norfolk & Western, said a considerable part of welding efficiency, particularly in track work, depends largely upon the condition of the apparatus used; grounds, he said, are a particular offender. G. M. Griffith, electrical engineer, Atlanta, Birmingham & Coast, told how his railroad has practically eliminated the use of steam at outlying points by means of electric heaters for oil and wash water, and in some cases, for offices, strip heaters being used for the latter application.

A question as to whether it was necessary to use No. 3 or No. 4 conductors in four-conductor cable for the ground wire was raised by L. G. Conklin, general electrical inspector, Delaware & Hudson. Mr. Trissal replied that it was not necessary, but the ground wire should not be less than No. 6.

The Mechanical Section report on electric welding was presented by R. W. Eves, superintendent, bolt and forge shop, Baltimore & Ohio. Concerning the use of metal spray welding, F. J. White, electrical engineer, Okonite Company, said his company had tried the process for repair of holes in pipes, but that the repair did not hold under 200-lb. pressure.

G. W. Bebout, electrical engineer, Chesapeake & Ohio, replied that one could hardly expect the spray to hold pressure, because the parent metal is cold when the coating is applied, and while the spray adheres, it does not constitute a weld. Mr. White explained that the process was desirable because the pipe, in this instance, contained an insulated cable.

C. G. Winslow, assistant electrical engineer, Michigan Central, explained that the specific gravity of the sprayed metal is much less than that of the original material, indicating that the sprayed metal is porous.

In response to a question raised by G. T. Johnson, assistant electrical engineer, New York, New Haven & Hartford, concerning the satisfactory character of a.c. welding, Mr. Winton replied that in track work a.c. was not suitable for manganese welding, and that a.c. would be less efficient when power is derived from a gas-engine-driven welder.

A. M. Candy, Hollup Corporation, when asked for information on a.c. welding, replied that the question constituted a large order, but that in brief he could say that a.c. was best for welding of heavy sections in a flat position. Current transmission, he said, was a greater problem than power factor.

H. F. Brown, assistant electrical engineer, New York, New Haven & Hartford, called attention to the satisfactory use of a.c. for resistance welding of flues, rails, etc., and also for the arc welding of thin sections. Information was requested concerning the use of the new electronic welders, and Mr. Winton replied that it is approved by users for sheet-metal welding because it causes less warping than other methods.

Power Plants and Power Supply

The two associations in joint session considered the Engineering Division power supply report and the Mechanical Division report on power plants. The power supply report calls attention to developments in the field of electric power supply. The trend is toward higher steam pressures with 1,400 lb. as a maximum, developed in plants burning powdered fuel and having feedwater entering the boilers at 400 deg. F. One plant now burns refuse bone coal, which was not formerly marketable. Of marked importance is the tendency of railroads to purchase rather than generate power. One railroad was induced to shut down two plants, the power company making concessions for their so doing. The concessions included a favorable demand rate, taken over four consecutive 15-min. periods during the month, elimination of emergency demands, a limit to normal demand charge, a coal clause based on B.t.u. fuel value, the payment of bills in 20 days and the purchase of the railway's old plant at a reasonable price. This instance is cited as an example to indicate a decided change in the attitude of the utilities, charges being based on actual cost rather than on bargaining.

Based on data collected by means of a questionnaire, a table is included which shows what 34 railroads have done to furnish standby power for air-conditioned passenger cars.

The power plant report consists essentially of data covering performance of seven railroad power plants. The figures show cost of electric power, steam, compressed air and water. The report concludes with an analysis of the principles by means of which good performance is obtained from the power plant.

Discussion—The power supply report of the Engi-

neering Section was presented by G. W. Bebout, electrical engineer, Chesapeake & Ohio, and W. S. H. Hamilton, electrical engineer equipment, New York Central.

Replying to a question concerning how many outlets for feeder should be used on standby motors, J. E. Gardner, electrical engineer, Chicago, Burlington & Quincy, replied that it depends upon whether two-phase or three-phase power is used and on the type of yard and on the method of running feeders.

P. Lebenbaum, assistant electrical engineer, Southern Pacific, raised a question concerning the relation between transformer capacity and number of outlets, to which Mr. Johnson replied that, in several instances, on his railroad the transformers have the same capacity as the connected load.

J. M. Trissal, assistant electrical engineer, Illinois Central, said that I. C. practice is now to use double outlets on each circuit, with circuit-breaker protection, the breakers allowing for one motor starting while the other is running, but not for both starting at the same time.

The Mechanical Section report on power plants was presented by A. W. Steele, electrical engineer, Gulf Coast Lines. Mr. Johnson said that some of the power costs shown on the report are so low as to indicate the desirability of installing steam plants rather than purchasing power for relatively small power requirements.

Mr. Winslow said that the figure of 1 cent per kw. hr., shown for one plant, includes fuel only, and not labor, and that where investment charges are included, the power cost is comparable to the price of purchased power. Mr. Winslow said that the figures in the report are very good and will stand analysis.

J. A. Andreucetti added that, when there are demands for exhaust steam and other steam consuming apparatus, generated power is pretty apt to be cheaper than purchased, at least during the winter months. Mr. Bebout said that he had been able to produce power from gas producer plants at ½-cent per kw. hr., but that if operators were careless, maintenance became something of a problem.

Motors

The Engineering Division report on application of motors and the Mechanical Division report on motors, control and wiring installation were also discussed in joint session. Lubrication recommendations for motors included in the Electrical Section report are, in brief, as follows: Oil, having a flash point of 350-450 deg. F., should be used for sleeve-bearing motors running at speeds from 1500-3600 r.p.m. Cheaper oil with a flash point as low as 200 deg. F. can be used for such motors running at speeds below 1500 r.p.m. Two-hundred-degree oil can be used for ball bearing motors at speeds up to 3600 r.p.m. Zero test oil must be used for motors subject to severe cold weather. Automatic oilers are now available for motors requiring frequent oiling. High flash-point oil must be used for bearings operating at high temperature, or having high bearing pressure. Grease-lubricated ball and roller bearings must have the lubricant renewed periodically in measured amount. It is important that grease be neutral; neither acid nor alkaline. Recommendations for the size of feeder cables are included.

The Mechanical Division report includes recommendations for wiring in hazardous locations. The rules for such wiring are made plain and the report also points out that an entire plant is not necessarily a hazardous location, because a hazardous process is carried on in one section of the plant. Wiring costs can be controlled if due consideration is given to such circumstances. A second section of the report consists of a review of previous A.R.E.E. committee reports, for the purpose of preparing this material for the Manual. The subjects included are instruction for the maintenance and test of electric motors, motor control, power-factor correction and lubrication of motors. Recommendations for lubrication included in the two reports agree in detail.

Discussion—The report on application of motors (Engineering Section) was presented by C. G. Winslow, assistant electrical engineer, Michigan Central. Referring to information recently published in Railway Electrical Engineer, on grounding, Mr. Winslow said he did not believe every electrician could tell how to make proper ground and that while a 10-ohm ground is offered as satisfactory, this is not sufficient, even for a 10-hp. motor.

The report on motors, control and wiring installation, Mechanical Section, was presented by J. A. Cooper, assistant electrical engineer, Wabash. Concerning the use of reduced voltage vs. line starters for motors, J. R. Sloan, chief electrician, Pennsylvania, said that it is necessary first to inquire of the power company to determine which are suitable to its requirements. Mr. Winslow said the protection of centrifugal pumps was relatively simple, since they can scarcely ever be made to carry more than maximum load, but that reciprocating pumps were a somewhat different problem. Mr. Sloan replied that reciprocating pumps can best be protected by a relief valve in the discharge line.

Electrical Section, Mechanical Division

Purchase of Electrical Energy

The report on the purchase of electrical energy deals particularly with the possibilities of power-rate reduction. It states that the majority of utilities have voluntarily offered reductions through lower demand charges, by elimination of the 11 months' continuation of maximum demand, by a reduction in rates or application of different rate schedules and by rewriting contract agreements to suit changed conditions and permitting consolidation of services. Electric blowers for locomotives in roundhouses, the report states, have not so far been entirely satisfactory, because of noise and rapid deterioration from moisture and gas. This, the report adds, should not condemn the equipment, but lead the manufacturers to overcome these shortcomings.

Discussion—The question of how to bill tenant railroads for standby air-conditioning power was the principal topic of discussion. J. A. Andreucetti designated as insufficient the method of using power cost without including power losses in distribution lines, and an additional charge to cover interest and depreciation. J. R. Sloan, chief electrician, Pennsylvania Railroad, told of instances in which the charge was based on bus-bar costs, plus costs of transmission, conversion, interest and depreciation. G. T. Johnson, assistant electrical engineer, New York, New Haven & Hartford, and Mr. Andreucetti indorsed the method described by Mr. Sloan, and the latter asked if the Section should make recommendations.

A. E. Grover, electrician, Pere Marquette, suggested that charges at various terminals would depend upon local conditions. A. E. Voigt, car lighting and air conditioning engineer, Atchison, Topeka & Santa Fe, said the matter should be handled by the A.A.R. price committee, and suggested that the section make recommendations. He added that the fixed price is not bad, because

while a road may lose at one point, it will gain at another. C. E. Wood, engineer of train lighting, Chicago, Milwaukee, St. Paul & Pacific, explained that the fixed price was suggested to avoid undesirable complication of price adjustment. The fixed price, he said, should be an average of costs and include those factors outlined by Mr. Andreucetti.

J. E. Gardner, electrical engineer, Chicago, Burlington & Quincy, said there was no question that all costs should be included and pointed out that it makes a difference where the power is metered. He added, that in the case of the Union Terminal, in Chicago, the several railroads have divided capital costs.

Application of Radio to Railway Service

The report of the committee on application of radio to railway service deals entirely with a communication system for train operation. In this system the transmitter is connected to the leading and trailing wheels of a locomotive or way-car. Most of its output is short-circuited through the rails but a certain portion flows in ever-widening circles through the ground. The impulses thus sent out are picked up by the receiver at the other end of the train. The system, now undergoing test, requires no license from the Federal government for its installation and operation. It can be used for two-way telephone communication between the two ends of a freight train, between trains and stations or towers, between stations and towers and between different trains on the same or on adjacent tracks, as well as between the head and rear end of parted trains.

Discussion—C. W. Nelson, supervisor train control and train lighting, Chesapeake & Ohio, presented the report. G. W. Bebout, told of the experience obtained several years ago on his railroad with radio train communication. The Federal Radio Commission at that time ruled that the frequencies in use should be allocated to police service. Now, he said, experiments are being conducted with higher frequencies, but that the development has been slow because railroads have not done much to promote it. If, he said, there were a reliable system available which could transmit about two miles, it would be a real asset to railroad operation.

Car Electrical Equipment

The report of the committee on car electrical equipment is the most elaborate of all of the reports, and deals with air-conditioning equipment, axle drives, voltage conditions on electric-lighted cars, electric marker lamps, storage batteries, revision of manual and development of power-supply equipment.

The committee has previously recommended the use of full automatic control for air-conditioned cars, and it calls attention to and describes a device known as the Fulton-Sylphon differential control, which automatically maintains a varying differential between interior and exterior car temperatures, without adjustment by train crews.

Concerning axle drives, the report states that during the year 1936-37 the installation of direct drives to axle generators has proceeded in increased numbers compared to previous years. Shop apparatus for testing such drives, as developed by the Canadian Pacific, is shown. Recommendations for inspection and lubrication of gear drives are outlined. This section of the report also states that V-belt drives continue to be applied in large numbers.

The section dealing with voltage conditions on electric-lighted cars includes a table and diagram to show the location and magnitude of voltage drop in the various parts of the line between the power source and the lamp.

The data indicates that it is not possible to maintain 32-volts at the lamp terminals and that it may be desirable to use 30- and 60-volt lamps in place of 32- and 64-volt lamps.

The subcommittee on electric markers points out that a large number of cars have been equipped with various types of receptacles and the development of a standard has been made difficult. The major portion of the section dealing with storage batteries is concerned with discharge characteristics of passenger-car batteries. Performance curves of cells made by the various manufacturers are shown.

The committee manifests an interest in Monobloc battery containers and plans to assemble as much information as possible concerning their performance. Detailed recommendations for revision for the manual are included. These deal with axle and generator pulleys, pulley spacings, battery boxes, battery containers, terminals, wiring, generators and battery rating.

The final section of the report is concerned with development of power supply equipment for trains. Advocates of the various systems now in use advance many good features in favor of particular systems, such as the present 32-, 64- and 110-volt type, also the power car located either at the head end or at the middle of the train, using 220-, 440- or higher a.c. voltages, and much interest is shown in the possibilities of using an engine-driven plant for the individual car. The possibilities of electric heating and electric cooking are given consideration.

Discussion—In presenting one section of the report, L. J. Verbarg, air-conditioning engineer, Missouri Pacific, said that maintenance of car equipment could not be given much consideration at first, because of the need for making installations quickly. Now, he said, manufacturers and railroads must get together to simplify apparatus and reduce difficulties of maintenance.

E. S. M. Macnab, engineer of electric car lighting, Canadian Pacific, said there was a need for instructions covering operation and maintenance of correlative control. T. J. Kenny, manager, railway equipment division, Fulton-Sylphon Company, replied that instructions have been issued to those railroads using it and that more information would soon be made available for general distribution. The system, he said, is designed to take the control out of the hands of the train crew and to produce more satisfactory conditions for passengers. It is now available for all types of air conditioning.

Mr. Macnab raised a point concerning the need for dismantling equipment when cars are shopped, asking how often evaporator coils should be cleaned. A. E. Voigt, car lighting and air-conditioning engineer, Atchison, Topeka & Santa Fe, said there is a distinct necessity for cleaning both evaporator and cooling coils every season and usually oftener. He added it is desirable to clean without removing them and that cleaning of cooling coils is closely associated with odors. When heater coils, he said, are also in the unit, the heat can be used to aid materially in drying the coils before cleaning. The Santa Fe has found the Sellers engine gun, using steam and water, particularly effective, but the method requires removal of coils. For cleaning in place, only compressed air is used.

P. J. Callahan, supervisor car and locomotive equipment, Boston & Maine, said that when cooling coils are cleaned with compressed air, canvas must be put over seats and the car afterwards given a general cleaning. Mr. Voigt added that static ventilators are not very good, because they exhaust varying amounts of air at different train speeds. Motor-driven fans, he said, are much bet-

ter and their action should not be influenced by venturi effect of static ventilators. Mr. Verbarg concurred with this opinion, saying that static ventilators, if not properly designed, are affected not only by train speed, but also by wind direction, velocity and humidity.

Kitchens Need Fresh Air

In reply to questions, by A. E. Ganzert, electrical inspector, Chicago, Rock Island & Pacific, Mr. Voigt said the kitchen is the hottest spot in the train and requires a large amount of fresh air. He recommended the use of filters and shutters for controlling the air through the kitchen, to avoid taking too much out of the car, and also to keep out an excess of cold air in winter weather.

E. J. Schmidt, mechanical engineer, railway division, Dayton Rubber Manufacturing Company, was asked to give information on V-belt mileage. He said that the Pullman Company, operating 3,000 cars, had averaged 146,000 miles per belt, and that the Pennsylvania had cars in service which had totaled as much as 300,000 miles. Belts and fasteners, he said, were constantly being improved, and that with proper maintenance these figures should be increased.

S. G. Petersen, shop engineer, Seaboard Air Line, asked Mr. Macnab why it was necessary to use the shop equipment described in the report for testing drives prior to their application. Mr. Macnab replied that these tests disclosed defects and assured satisfactory operation; they are made with the axles on which they are to be used. P. J. Callahan moved that the Section recommended the adoption of 30- and 60-volt lamps instead of 32- and 64-volt lamps for train lighting purposes. The motion was adopted.

J. C. McElree, electrical engineer, Missouri Pacific, offered the opinion that the committee should recommend some kind of standard for marker outlets. Marker-lamp circuits, he added, should be separate and run from the car panel without any switch. Mr. Callahan replied that the committee feels the standard plug and receptacle should be developed first and that consideration of circuits would follow logically.

In presenting the section of the report concerning storage batteries, G. W. Wall, electrical foreman, Delaware, Lackawanna & Western, said that the 77-deg. figure shown in the report should be 80 deg.

Storage Batteries Discussed

The report includes a method for calculating the capacity of lead-acid storage batteries. D. C. Wilson, railway sales manager, Edison Storage Battery Company, explained that a method similar to that described in the report applies to the calculation of capacity of nickel-iron-alkaline batteries for various discharge rates, except that the minimum voltage limit is 1.12 volts per cell, instead of 1.75.

Monobloc containers for storage batteries were discussed at some length, and it was the consensus of opinion that they meet service conditions satisfactorily.

In presenting the section of the report concerning power supply, Mr. Wall called on W. S. H. Hamilton for an expression of opinion, and he suggested that the Electrical Section should request the Mechanical Division to have the matter of power supply handled by the Division of Equipment Research, with the aid of the Electrical Section, Division 5. This, he said, was desirable, because important questions of interchange are involved.

(The remainder of the report of the Electrical Section, Mechanical Division, and the report of the Electric Section, Engineering Division, A.A.R., will appear in next week's issue.—Editor.)

Critical Situation Needs Prompt Attention, Says Rate Petition

(*Continued from page 644*)

increases in operating costs since the low point of the depression, railroad revenues have not been sufficient to meet their necessities. In an effort to meet the situation, the Interstate Commerce Commission, on April 18, 1935, authorized certain emergency charges on freight. With modifications, these charges remained in force until December 31, 1936, when they expired, resulting in a reduction in the carriers' revenues of $120,000,000 a year, on the basis of 1936 business. On October 22, 1937, the Interstate Commerce Commission authorized a restoration of a portion of this loss of revenue by moderate increases in rates on certain specific commodities, estimated to yield about $47,500,000 a year. That was an appreciated step in the right direction but manifestly inadequate to meet the necessities of the situation as it has developed since the application in that case was filed last year."

Meanwhile the railroads are proceeding to file the increased-rate tariffs authorized in Ex Parte 115. The aim is to make those covering increases specifically authorized effective on November 10 under the sixth-section authorization permitting a filing on five-days notice. Tariffs covering proposed increases in rates where outstanding orders were removed by the decision will be filed on the regular 30-days notice, the commission having denied the railroad application to publish on 15-days notice.

The announcement of the new petition brought from the National Bituminous Coal Commission and the Consumers' Counsel a statement declaring that they "will use all proper legal means to obtain reconsideration of the transportation rates that were recently put into effect on bituminous coal and will oppose further increases."

New Book . . .

Impact Tests of Light-Weight Box Cars. Summary Report prepared by the Division of Equipment Research, now the Division of Engineering Research, Association of American Railroads, 59 East Van Buren Street, Chicago. 54 pages. Price to member roads $1; to others $2.

This report was prepared at the request of the A.A.R. Mechanical Division Committee on Car Construction, on April 1, 1937, and revised October 1, 1937. The report contains the result of impact tests conducted with two experimental light-weight box cars, one, built by the Pullman-Standard Car Manufacturing Company, embodying the extensive use of welded Cor-Ten Steel construction and weighing 34,200 lb.; the other car, built by the Mt. Vernon Car Manufacturing Company, being also made of Cor-Ten steel but with riveted construction throughout and weighing 36,400 lb.

The report contains a brief description of the experimental test cars and tables of detailed comparative car weights in Part I. A summary of the results of the tests is included in Part II and Part III describes extensometer and deflectometer tests of the Pullman-Standard car. Other sub-divisions of the report include: Part IV, Impact Test Procedure; Part V, Results of Impact Tests of Pullman-Standard Light-Weight Box Car; Part VI, Results of Impact Tests of Mt. Vernon Light-Weight Box Car; Part VII, Results of Impact Tests of A.A.R. Standard Box Cars (1933-1934); Part VIII, Distortion of Car Structures During Impact Tests; and Part IX, Performance of Experimental Light-Weight Box Cars.

NEWS

Anthracite Roads Attack State Report

Carriers deny I.C.C. passenger fare order is precedent for coal rate reductions

In filing exceptions to a tentative report of the Pennsylvania Public Utility Commission proposing reductions in intrastate anthracite rates amounting to approximately $3,000,000 annually, counsel for the respondent anthracite carriers has attacked particularly those conclusions in the report based on the decision reached by the Interstate Commerce Commission in 1936 in the passenger fares case (214 I.C.C. 174) ordering coach fares at two cents and Pullman fares at three cents per mile. The tentative report, issued in proceedings initiated by the state utility commission by request of the Pennsylvania Retail Coal Merchants' Association, referred to the passenger fares decision as a precedent for ordering the proposed reduction in intrastate anthracite rates.

This reasoning the carriers took exception to on the following grounds: (1) The state Public Utility Law does not contain a provision similar to paragraph 2 of section 15a of the Interstate Commerce Act which gives the commission power to "prescribe just and reasonable rates" upon consideration given "to the effect of rates on the movement of traffic. . . ." (2) The I.C.C. exceeded its powers in the passenger fares case. (3) The facts of record in the two cases are entirely different, since, prior to the passenger fares case, the eastern carriers had made no reduction in passenger fares since 1920, while present intrastate anthracite rates of the respondent roads to points concerned in the proceedings are from 63 cents to $1.57 per ton below 1920 rates; that, in fact, such reductions "have had the effect of placing the rates practically on the 1910 level, or far below the level of present-day prices and wages." (4) The passenger fares order was handed down in the expectation of increasing the roads' net revenues thereby, while the tentative state report indicates no such purpose; records show that such reductions on anthracite rates would result in reduced net revenues. (5) The passenger fare decision was influenced by the possibility of a greatly-increased passenger business through low fares; on the other hand, there is little likelihood of an increased demand for anthracite, and since the railroads now carry the great bulk of anthracite shipments to Pennsylvania points, there is little truck-hauled traffic to be gained by the proposed rate reduction. (6) The reduction in passenger fares was passed on 100 per cent to passengers, whereas "there is . . . no assurance that further reductions in the rates on anthracite would be passed on 100 per cent to the consumers," since the Public Utility Commission has no control over mine prices or retail dealers' margins. (7) The I.C.C. held that the carriers can handle increased passenger traffic with little increase in operating costs; on the other hand, any increase in anthracite shipments by reason of lower rates would mean a *proportionate* increase in operating expenses.

In answer to the allegation of the report that reduced railroad rates would mitigate competition encountered by established retail anthracite dealers from direct truck hauls, the carriers have held that the state commission does not possess the power to compel rate reductions to meet alleged truck competition or to assist the anthracite retail dealers, basing their position, among other precedent decisions, upon a finding of the I.C.C. in 1936 (Long Island Coal Merchants Association, Inc., v. Long Island R. Co., supra) in which that body held that "the matter of truck competition is not controlling in the determination of whether the rates assailed exceed reasonable maxima."

R. E. A. Status Argument

The Interstate Commerce Commission, Division 5, will hear oral arguments at Washington, D. C., on November 22 in the cases involving the status of Railway Express Agency operations under the Motor Carrier Act, and the common carrier application of the Southeastern Express Company.

Film Illustrates Uses of Insulated Wires and Cables

The Okonite Company, Passaic, N. J., has recently completed a new two-reel sound motion picture film illustrating the manufacture and application of rubber insulated wires and cables. Lowell Thomas is the narrator. The film is available in 16 mm. and 35 mm. sizes.

S. A. L. Reports 20 Per Cent Rise in N. Y.-South Travel

According to figures compiled by the passenger department of the Seaboard Air Line, during the first 21 days in October passenger business from New York to the South increased 20 per cent over the corresponding period of last year. Substantial increases are also reported from Boston, Mass., Philadelphia, Pa., Pittsburgh, Pa., and other northern points.

Slow Revamping Not Sec. 77's Fault

Fairman Dick finds obstacle to reorganization lies in poor net earnings

Declaring that speedy railroad reorganizations would not have occurred even if Section 77 of the Bankruptcy Act had been "one hundred per cent perfect," Fairman R. Dick of the financing house, Dick & Merle-Smith, told the Chamber of Commerce of the State of New York on November 4 that much criticism of security holders because of delay in reorganizations is based upon an erroneous assumption.

"The underlying assumption in all this criticism and the basis of many proposals for restoring sound credit conditions through reorganizations is that the trouble with the railroads has been a continually increasing burden of fixed charges and the evidence presented that the charges are excessive is the fact that the railroads cannot service these charges today. It is further assumed that the railroad industry has changed, that the demand for rail transportation has diminished, that plant and capital structures have outgrown the demand for transportation and that, at least to some extent, the country is over-built with railroads and that substantial amounts of railroad property must be written off as a loss in the same way that many of the canals were written off as a loss in the past.

"Railroad debt has not been increasing relative to the plant, it has been decreasing. Fixed charges have not been increasing relative to the plant or to the service performed, they have been decreasing. Capital structures have not outgrown the demand for service represented, let us say, by gross revenues, but the demand for transportation, measured by gross revenues, has far outstripped the capitalization of the railroads.

"This is not to say that there have been no cases of unwise piling up of debt among the individual roads. There have been such cases; several of them roads now in bankruptcy. However, the average debt burden of the railroads in bankruptcy is just about the same as the average for all railroads.

"In the decade ending in 1900, fixed charges consumed approximately 30 per cent of gross operating revenues; in the seven year period from 1900 to 1907—the period of the greatest railroad prosperity—fixed charges consumed approximately 24

(*Continued on page 662*)

September N.O.I. 15.4% Under '36

Return for month was 1.9 per cent—Nine-months rate was 2.47 per cent

Class I railroads in September had a net railway operating income of $59,304,948, which was a decrease of 15.4 per cent compared with the same month last year, according to the Bureau of Railway Economics of the Association of American Railroads. This decrease, the A.A.R. says, "was due to rising costs of operation, which include increased cost of materials, supplies and fuel and also a higher wage rate." Operating costs in September, were 5.7 per cent above those for September, 1936, while gross revenues were only 1.7 per cent above the same month one year ago. The September return does not reflect the wage increase to train and engine forces which did not become effective until October 1; it does include the increases to non-transportation forces which became effective on August 1.

The September net railway operating income was at the annual rate of return of 1.96 per cent. In September, 1936, the net was $70,096,166, or 2.32 per cent, and in September, 1930, it was $102,852,390, or 3.39 per cent.

Gross operating revenues for September amounted to $363,070,851 compared with $357,058,214 in September, 1936 and $462,209,448 in September, 1930, operating expenses totaled $262,711,697 compared with $248,450,132 in the same month in 1936 and $316,494,334 in September, 1930.

In the first nine months of 1937 the net railway operating income totaled $468,449,039, or 2.47 per cent as compared with $434,482,735, or 2.3 per cent in the first nine months of 1937 and $648,115,287, or 3.44 per cent in 1930.

Gross for the nine months totaled $3,174,641,589 compared with $2,929,355,183 for the same period in 1936, and $4,035,083,343 for the same period in 1930, an increase of 8.4 per cent in 1937 above 1936, but 21.3 per cent below 1930. Operating expenses amounted to $2,356,057,531 compared with $2,163,681,990 for the same period in 1936, and $3,018,212,919 for the same period in 1930—8.9 per cent above the former, but 21.9 per cent below 1930.

Class I roads in the first nine months of 1937 paid $251,604,812 in taxes compared with $231,707,583 in the same period in 1936, and $271,435,608 in the same period in 1930. For September the tax bill amounted to $29,958,158, an increase of $3,058,127 or 11.4 per cent above September, 1936. Nineteen Class I roads failed to earn expenses and taxes in this year's first nine months; eight roads were in the Eastern district, three in the Southern district, and eight in the Western district.

Class I roads in the Eastern district for September had a net railway operating income of $29,446,160 compared with $36,781,019 for September, 1936, and $43,450,802 for September, 1930. For the first nine months of 1937 their net was $268,309,832, or 2.93 per cent, as compared with $265,110,125 or 2.91 per cent for the same period in 1936, and $341,178,879 or 3.86 per cent in 1930. Gross in the Eastern district for the nine months totaled $1,585,695,783, an increase of 7.0 per cent compared with 1937, but a decrease of 21.1 per cent compared with 1930, operating expenses totaled $1,138,320,823, an increase of 8.2 per cent above 1936, but a decrease of 23.8 per cent under the first nine months of 1930.

In the Southern district the net for September was $6,418,209 compared with $7,809,684 for September, 1936, and $8,827,060 for September, 1930. For the first nine months of 1937 the net was $57,749,243, or 2.48 per cent, as compared with $52,904,206, or 2.27 per cent for the same period in 1936, and $63,017,348, or 2.6 per cent in 1930. The nine-months gross in the Southern district amounted to $391,289,397, an increase of 8.0 per cent compared with the same period in 1936, but a decrease of 20.4 per cent under the same period in 1930, operating expenses totaled $293,473,269, an increase of 7.3 per cent above the same period in 1936, but a decrease of 24.5 per cent under 1930.

For September, the Class I roads in the Western district reported a net of $23,440,579 compared with $25,505,463 for September, 1936, and $50,574,528 for September, 1930. For the first nine months in 1937 their net was $142,389,964 which was at the rate of 1.91 per cent, for the same nine months in 1936, the net was $116,468,404, or 1.56 per cent, and for the same period in 1930 it was $243,919,060 or 3.21 per cent. Gross in the Western district for the first nine months amounted to $1,197,656,409, an increase of 10.4 per cent above 1936, but a decrease of 21.9 per cent under the same period in 1930. Operating expenses totaled $924,263,439 an increase of 10.3 per cent compared with 1936, but a decrease of 18.6 per cent under 1930.

CLASS I RAILROADS—UNITED STATES

	1937	1936	1930
Month of September			
Total operating revenues	$363,070,851	$357,058,214	$462,209,448
Total operating expenses	262,711,697	248,450,132	316,494,334
Taxes	29,958,158	26,900,031	31,238,205
Net railway operating income	59,304,948	70,096,166	102,852,390
Operating ratio—per cent	72.36	69.58	68.47
Rate of return on property investment—per cent	1.96	2.32	3.39
Nine Months Ended September 30			
Total operating revenues	$3,174,641,589	$2,929,355,183	$4,035,083,343
Total operating expenses	2,356,057,531	2,163,681,990	3,018,212,919
Taxes	251,604,812	231,707,583	271,435,608
Net railway operating income	468,449,039	434,482,735	648,115,287
Operating ratio—per cent	74.21	73.86	74.80
Rate of return on property investment—per cent	2.47	2.30	3.44

Lake Coal Service Hit by Examiner

E. A. Burslem finds railroad practices result in violations of law

Practices of railroads handling lake cargo coal to Lake Erie and Lake Ontario ports result in violations of the Interstate Commerce Act, and in some instances of the Elkins Act, according to the recommended findings of Examiner E. A. Burslem in his proposed report to the Interstate Commerce Commission in No. 27266, Lake Coal Demurrage. Nine railroads, which in 1936 carried 36,000,000 tons of lake cargo coal, are involved in the investigation, launched on the commission's own motion to probe the demurrage rules and charges and practices and services of carriers handling the lake coal for transshipment.

Respondent railroads are: The Baltimore & Ohio; Bessemer & Lake Erie; Chesapeake & Ohio; Delaware, Lackawanna & Western; Erie; Lehigh Valley; New York Central; Pennsylvania, and Wheeling & Lake Erie. Examiner Burslem's report occupies 184 pages, and he makes 18 recommended findings, including the following:

That the allowance of car detention by the New York Central and the Pennsylvania on all cars of pre-season lake coal held at Lake Erie and Lake Ontario ports, on which substitution of vessels occurred, was without tariff authority, resulting in the non-collection of applicable demurrage charges.

That allowance by the Chesapeake & Ohio of 2,156 days' detention on 128 cars of pre-season lake coal, held at Toledo, Ohio, and delivered to the steamer Reiss April 17, 1935, was without tariff authority and resulted in the non-collection of the applicable demurrage charges.

That the allowance by the Pennsylvania of 4,016 days' detention on 116 cars of pre-season lake coal, held at Sandusky, Ohio, and delivered to the steamer Harry Yates April 4, 1935, was without tariff authority and resulted in the non-collection of the applicable demurrage charges.

That certain practices of all port respondents with respect to the handling of, and computation of detention on, cars of pre-season lake coal held at each of the lake ports prior to April 15, 1936, as indicated in the report, afford reasonable grounds for the belief that violations of the Elkins Act and Section 10 (2) (3) of the Interstate Commerce Act were committed.

That the opening date of navigation for the year 1935 at Toledo, Ohio, for the movement of so-called "river" coal was March 1; and that allowances by the Chesapeake & Ohio, Baltimore & Ohio and the New York Central for detention at Toledo, Ohio, on all cars of river coal transshipped on and after March 1, 1935, were without tariff authority and resulted in the non-collection of the applicable demurrage charges.

That Lake Coal Demurrage Rule 8 (c), effective April 15, 1936, is, and for the future will be, unreasonable to the extent that it exceeds or may exceed the period of time which would accrue between the last day of February and the actual date of opening of navigation of the lake or body of water to which individual shipments of lake coal are destined.

That the provisions of Lake Coal Demurrage Rule 3 (1), effective April 15, 1936, referred to herein as the sequence release rule, providing for the substitution of the released dates of cars, provides an indirect method of the grant of an allowance contrary to the specific provisions of the tariff in violation of Section 6 of the Interstate Commerce Act. Respondents should be required to cancel those provisions from the rule.

That Lake Coal Demurrage Rule 2, effective April 15, 1936, providing an allowance of five (5) days' free time on each car of lake coal upon arrival at the ports is, and for the future will be, unreasonable to the extent that it exceeds or may exceed an allowance of three (3) days' free time and to the extent that it applies on cars of pre-season coal.

That Lake Coal Demurrage Rule 5 [relating to reconsignments], effective April 15, 1936, is, and for the future will be, unduly preferential of transshippers of lake coal and of shipments

of lake coal and unduly prejudicial against consignees of domestic, or commercial, coal and against shipments of domestic, or commercial, coal for delivery at the same destinations.

That the allowance by the New York Central for detention of, and computation of demurrage charges on, 42 cars of coal at Ashtabula, Ohio (21 cars consigned to the Pittsburgh Coal Company and reconsigned to the Pickands-Mather Company, and 21 cars consigned to the Pickands-Mather Company and reconsigned to the Pittsburgh Coal Company), in March, 1934, was without tariff authority and resulted in the non-collection of the applicable demurrage charges.

That Lake Coal Demurrage Rule 7 [relating to reconsignments], effective April 15, 1936, is, and for the future will be, an unjust and unreasonable transportation regulation and practice.

That the Lake Coal Demurrage Rules and Charges, insofar as they apply on shipments of vessel fuel coal, are, and for the future will be, unduly preferential of shipments of vessel fuel coal and of consignees of such coal, and unduly prejudicial against shipments of domestic, or commercial, coal for track delivery, and against consignees of such coal, at the same destinations.

That the practice of respondents in holding cars of lake coal short of destination is essentially an unlawful reduction in the published demurrage charges in violation of Section 6 (7) of the Interstate Commerce Act.

That respondents' practices in deferring collection of lake coal demurrage charges are violative of Section 3 (2) of the Interstate Commerce Act and rules promulgated by the Commission in pursuance thereof.

That allowances granted by respondents for "run-around" cars of lake coal are not authorized by the Lake Coal Demurrage Tariff and result in the non-collection of the applicable demurrage charges.

That the exception to Lake Coal Demurrage Rule 3 (c) 1, respecting the released date of cars of lake coal is, and for the future will be, an unjust and unreasonable regulation and practice affecting the rate of demurrage charges.

That respondents' investments in their coal docks and coal unloading facilities, their revenues, full distributed costs, and rate of return on the amounts invested, for the year 1935, except as to the Chesapeake & Ohio, which is for 1936, are as indicated in the report; that respondents the Baltimore & Ohio, Bessemer & Lake Erie, Pennsylvania in connection with its coal docks and coal unloading facilities at Ashtabula and Cleveland, Ohio, and the Wheeling & Lake Erie in connection with its coal dock and coal unloading facility at Ironville, Ohio, are receiving, for their coal docks and coal unloading facilities, rentals less than the actual annual cost of those properties; that all other port respondents, except the Chesapeake & Ohio and the Pennsylvania in connection with its coal dock and coal unloading facilities at Sandusky, Ohio, are receiving non-compensatory charges for the transfer of lake coal from cars to vessels in violation of Sections 2, 3 (1) and 6 (7) of the Interstate Commerce Act; and that under the circumstances shown in the report there is reasonable ground for the belief that all port respondents herein, except the Chesapeake & Ohio and the Pennsylvania in connection with its coal dock and coal unloading facilities at Sandusky, Ohio, have violated and are violating the provisions of the Elkins Act.

There is also the finding with respect to the valuation of the lake coal facilities of the various roads, while in the report is a table showing the investment in these facilities and the rate of return on such investment. This table, which sets up revenue from each facility against its "full distributed cost", shows that in 1935 the cost exceeded the revenue from the B. & L. E. facility at Conneaut, Ohio; the W. & L. E. facilities at Huron and Ironville, the D. L. & W. at Oswego, N. Y., the Erie at Cleveland, Ohio, the L. V. at North Fair Haven, N. Y., and the Pennsylvania at Cleveland and Erie, Pa. The P. R. R. earned 5.95 per cent and 3.73 per cent respectively on its Sandusky, Ohio, and Ashtabula investments; the B. & O. 1.47 per cent at Toledo and Lorain, 1.79 per cent at Fairport and 0.26 per cent at Sandusky; the D. L. & W., 2.44 per cent at Buffalo, N. Y.; the L. V. 0.19 per cent at Buffalo; the New York Central, 1.56 per cent at Toledo and 3.17 per cent at Ashtabula. The Chesapeake & Ohio, for which 1936 figures were available, earned in that year an 8.53 per cent return on its $4,962,518 investment at Toledo.

D. B. Robertson Is R. B. A. Speaker

D. B. Robertson, president of the Brotherhood of Locomotive Firemen and Enginemen, will be the speaker at the annual dinner of the Railway Business Association on Thursday evening, November 18. More than 2,000 seats have already been reserved, insuring the largest dinner in the history of the association.

H. & M. Fare Hearings Postponed

Interstate Commerce Commission hearings on the Hudson & Manhattan's fare-increase proposal have been postponed from November 10 to January 18, 1938. The H. & M. is seeking to raise from six cents to 10 cents the rate between its Jersey City, N. J., stations and downtown Manhattan.

Air Express Business Scores All-Time High

Air express shipments handled by the Air Express Division of the Railway Express Agency in September reached a new all-time high of 59,879. This is an increase of 12,642, or 36½ per cent, over the total of 47,236 shipments of all air express handled in the United States for the corresponding month in 1936. In December, 1936, its previous high month, Express handled 58,390 shipments.

I. C. C. to Investigate Truck Rates In Middle Atlantic States

The Interstate Commerce Commission has instituted on its own motion an investigation as to the lawfulness of motor truck rates in the Middle Atlantic states, setting the case for hearing before Division 5 at Washington, D. C., on November 10. Into the case (Ex Parte MC 14) there has been consolidated I. & S. M-205, Rates Over Freight Forwarders, Inc., in which a suspension order was recently entered.

Rock Island Seeks to Modify A. T. C. System

The Chicago, Rock Island & Pacific has applied to the Interstate Commerce Commission for authority to make certain modifications in its automatic train control system. The proposal, as set forth in an I.C.C. notice to interested parties, involves "change of medium speed and low speed settings of automatic train control governors on certain trains to increase medium speed limit from 30 m.p.h. to 45 m.p.h. and to increase low speed limit from 15 m.p.h. to 25 m.p.h."

Brazilian Crash Kills 5

At least five passengers were killed and about 45 injured when a Sao Paulo-bound train of the Central Brazil Railway crashed into a freight train on November 2, near Mesquita, Brazil, about 36 miles out of the Rio de Janeiro terminus on the main line, according to press dispatches. The complete wrecking of two coaches in the train was responsible for the greater part of the casualties. The incident follows close upon the heels of a serious derailment on the road on October 31, when a portion of a mail train plunged off a high bridge.

Welded Track to Feature R. & L. H. Society Meeting

A discussion of recent developments in the welding of railroad track will feature the next meeting of the New York chapter, Railway & Locomotive Historical Society, to be held on November 12 at 7:30 p.m. in room 1101, Engineering Societies building, 29 West 39th street, New York. H. S. Clarke, engineer, maintenance of way, Delaware & Hudson, who has been in charge in recent track welding work on that road, will present a talk entitled "Welded Track". This will be illustrated by moving pictures supplied by Sperry Rail Service, Brooklyn, N. Y., and by the Metal & Thermit Corporation, New York.

Pacific Electric Strike Threat

Acting to avert a strike among the employees of the Pacific Electric, President Roosevelt, on November 1, appointed an emergency board under the provisions of the Railway Labor Act to investigate a dispute that has arisen between the management and some of its employees who are represented by the Brotherhood of Trainmen. The emergency board will be composed of the following members: Isaiah L. Sharfman of the University of Michigan, Dexter M. Keezer, president of Reed College, Portland, Ore., and John P. Devaney of Minneapolis, Minn. The function of the board is to make findings of fact and report to the President.

B. & M.'s North Station to House Dairy "Farm"

Boston & Maine commuters will watch cows graze in the concourse of the road's North Station, Boston, Mass., during the week of November 14, called National Milk Week. A rural plot, with facilities for modern electrical milking, will be erected in the station by the railroad in co-operation with New England Dairy and Food Council and the Massachusetts Department of Agriculture. Two blooded dairy cows will be set to grazing in the plot and will be milked twice daily. Dairy machinery will also be installed in the station to cool the product and prepare it for drinking by the commuters.

Equipment Depreciation Orders

The Interstate Commerce Commission on October 30 issued another series of sub-orders and modifications of previous sub-orders in No. 15100, Depreciation Charges of Steam Railroad Companies, prescribing equipment depreciation rates for 11 railroads, including the Atchison, Topeka & Santa Fe and the Pittsburgh & Lake Erie. The composite percentages, which are not prescribed rates, range from 3.34 per cent for the Washington Terminal to 10.2 per cent for the Atlantic & Western.

The Santa Fe's composite percentage of 3.77 is derived from the following prescribed rates: Steam locomotives, 3.52 per cent; Diesel road locomotives, 6.33 per cent; Diesel switching locomotives, 4.75 per cent; refrigerator and ice cars, 4.75

per cent; other freight-train cars (wood underframe), 4.41 per cent; other freight-train cars (steel and steel underframe), 3.59 per cent; stainless steel light-weight passenger-train cars, 3.89 per cent; other passenger-train cars, 2.9 per cent; floating equipment, 2.87 per cent; work equipment, 4.8 per cent; miscellaneous equipment, 12.6 per cent. The 3.66 composite percentage for the Pittsburgh & Lake Erie is derived from the following prescribed rates: Steam locomotives, 3.8 per cent; freight-train cars, 3.68 per cent; passenger-train cars, 3 per cent; work equiment, 3.46 per cent; miscellaneous equipment, 18.26 per cent.

"Field Day"—Correction

The Interstate Commerce Commission's "field day" will be held on November 16 and 17 and not on the 15 and 16 as erroneously reported in *Railway Age* for October 30, page 621.

Hearing on Complaint of Negro Congressman

The complaint of Arthur W. Mitchell, Negro congressman from Chicago, against the Chicago, Rock Island & Pacific, the Illinois Central and the Pullman Company, charging that he was the victim of undue discrimination in that he was forced to ride in a "Jim Crow" car when he held a first class ticket, has been set by the Interstate Commerce Commission for hearing before Examiner Disque at the Hotel Sherman, Chicago, on December 10. Congressman Mitchell's complaint, which was outlined in the *Railway Age* of September 4, is based on events occurring while he was on a railroad journey from Chicago to Hot Springs, Ark.

Freight Shipping Exhibit to be Shown at Rochester

A comprehensive display of modern packing, crating and shipping practices, prepared and supervised by the Freight Container Bureau, Association of American Railroads, is to be shown at the Chamber of Commerce building, Rochester, N. Y., on November 9, 10 and 11, under the sponsorship of the Traffic Club of Rochester. Designed to spread information on the reduction of loss and damage to freight shipments through efficient loading, the exhibit will include models and designs of wooden and fiber containers and interpretive displays of proper methods of packing representative classes of freight. Engineers of the bureau will be present to explain the features of the exhibit and answer inquiries.

Would Permit C. B. & Q. Purchase of Truck Line

Examiner John S. Higgins has recommended in a proposed report that the Interstate Commerce Commission approve the purchase by the Burlington Transportation Company, highway subsidiary of the Chicago, Burlington & Quincy, of the certain operating rights of Bell Transfer, Inc., on routes generally described as between Chicago, Kansas City, Mo., and St. Joseph and between Kansas City and Minneapolis, Minn., via Des Moines, Iowa. The examiner would attach conditions stipulating that the authority "shall not extend to operation over vendor's routes north of Des Moines or east of Canton and Jacksonville." Also, that the service shall be confined to interchange of traffic at stations of the Burlington.

Northwest Carmen Elect Officers

At the annual meeting of the Northwest Carmen's Association held early this month at St. Paul, Minn., the following officers were elected for the ensuing year: President, H. A. Rollwagen, car foreman, Chicago, Burlington & Quincy, St. Paul, Minn.; First Vice-President, G. R. Johnson, chief clerk to master car builder, Northern Pacific, St. Paul, Minn.; Second Vice-President, F. M. Washburn, car foreman, Chicago, Milwaukee, St. Paul & Pacific, Minneapolis, Minn.; Third Vice-President, E. J. Robertson, superintendent car department, Minneapolis, St. Paul & Sault Ste. Marie, Minneapolis, Minn.; Secretary, E. N. Myers, chief interchange inspector, Minnesota Transfer Railway, St. Paul, Minn.; Treasurer, F. S. Leavitt, auditor, Minnesota Transfer Railway, St. Paul, Minn.

Oral Argument Held In Savannah & Atlanta Case

Oral argument in the case of the reorganization of the Savannah & Atlanta was held before Commissioners Meyer, Porter and Mahaffie of the Interstate Commerce Commission on October 29. J. A. Fowler and Herman Riddell appeared for the Savannah & Atlanta bondholders reorganization committee and told Division 4 that they were satisfied with the present plan as put forth by the bondholders, but that they would accept the examiner's changes if the commission decided to incorporate them into the final plan. Thomas K. Finletter, appearing for the Piedmont Associates, owners of a large portion of the Savannah & Atlanta bonds, defended the provision of the original plan which would allow a return of 7.2 per cent on the new common stock as against the proposal of the examiner for a return of 5 per cent. George H. Porter, representing the City Bank & Farmers Trust Company of New York trustee under one of the mortgages, objected to the idea of assessing all bondholders for the expenses of the bondholders' reorganization committee. He also opposed the idea of giving the Savannah & Atlanta bondholders only $240 for a $1,000 bond.

With the completion of oral argument, there remains only the filing of briefs before the commission can promulgate a final plan for reorganization of the Savannah & Atlanta.

Examiner Would Let Rock Island Lease Truck Line

Examiner Robert R. Hendon has recommended in a proposed report that the Interstate Commerce Commission approve, subject to conditions, a lease by the Chicago, Rock Island & Pacific of the operating rights of the A. & A. Truck Lines between Hutchinson, Kan., and Dodge City, 158 miles. The condition which the examiner would attach to the approval would provide that the authority "shall not include the right to render service from, to, or the interchange of traffic at, any point other than a station on said railway, and shall be subject to such further limitations or restrictions as this commission may hereafter find it necessary to impose in order to insure that the service shall be auxiliary or supplementary to train service of said railway and shall not unduly restrain competition."

The proposed lease, to expire on October 31, 1941, provides that the Rock Island shall pay $1 and A. & A. Truck Lines shall carry Rock Island freight in accordance with an operating and option contract executed concurrently with the lease. The examiner did not pass upon the option feature, which gives the Rock Island an option to purchase the operating rights involved at any time during the term of the lease.

Club Meetings

The Southern and Southwestern Railway Club will hold its next meeting on November 18, at 10 a.m., in the Ansley Hotel, Atlanta, Ga. James Partington, manager, engineering department, American Locomotive Company, will present a paper entitled "Locomotive Design and Construction." Election of officers for the ensuing year will also be held.

The Rochester Traffic Club will hold a dinner meeting on Wednesday, November 10, at 6:30 p.m., at the Chamber of Commerce building, Rochester, N. Y. Robert S. Henry, assistant to the president, Association of American Railroads, will be the principal speaker.

The Eastern Car Foremen's Association will meet on Monday, November 8, at the "Brown Derby" night club, 111 Arlington street, Boston, Mass., at 7 p.m. Music and dancing will feature the program.

The Western Railway Club will hold its next meeting on November 22, at 8 p.m., in the Sherman Hotel, Chicago. A paper entitled "What the Public Demands—What It Does When It Gets It—What the Railway of Tomorrow Will Provide" will be presented by H. W. Siddall, chairman, Transcontinental Passenger Association, Chicago. "What the Builders Are Doing—New Materials, New Designs, New Comforts" will be presented by E. W. Test, assistant to president, Pullman-Standard Car Manufacturing Company. A new talking moving picture of modern passenger car construction will also be shown, and a reception and dinner will precede the meeting.

I. C. C. to Determine Labor-Act Status of "Red Caps"

The Interstate Commerce Commission has instituted an investigation to determine whether or not "red caps" are employees of the railways within the meaning of the Railway Labor Act, and has entered an order directing the carriers to file returns to a questionnaire designed to gather information on the subject. The information called for must be furnished by December 15 with respect to the porter situation at each passenger station at all cities of over 100,000 population, based on the 1930 census.

The questionnaire requires returns with

respect to two classes of porters—Class A, hand baggage porters who are paid salaries, wages or other compensation by the railroad; Class B, hand baggage porters who receive no compensation other than tips.

Carriers Oppose N. J. Canal Plan

On November 3, nine New Jersey carriers filed a statement with a special board of engineers, United States War Department, asserting their opposition to rehabilitation of the Delaware & Raritan canal by the federal government which was proposed at a public hearing before the army board in Newark, N. J., on October 21, in a brief filed by the Delaware & Raritan Canal Commission of the State of New Jersey. The railroad statement further contains a request that the roads be afforded opportunity to file supplemental statements regarding cost and traffic before the board prepares its report.

The canal, which connects the Raritan River at New Brunswick, N. J., with the Delaware River at Bordentown, before its abandonment formed a link in a water route between New York and Philadelphia, Pa., and its rehabilitation has been urged as a step in the completion of an inner water route along the Atlantic coast. The canal was owned and operated as a subsidiary by the Pennsylvania before it was deeded to the State of New Jersey in 1933.

The carriers' statement, which was prepared under the direction of A. H. Elder, general solicitor of the Central of New Jersey, asserts that the cost of deepening and improvement as estimated by the state canal commission is too low and that expectations of tonnage are exaggerated. It further points out that there is already a surplus of transportation facilities afforded by trucks, railroads and pipe lines in the area. Finally the railroads argue that a great part of the cost of rehabilitation would fall upon New Jersey taxpayers who will not enjoy the greater part of the canal's promised benefits.

Grade Crossing Accidents Exceed Last Year

The number of accidents at highway-railroad grade crossings, and the resulting casualties so far in 1937 continue to exceed the same period in 1936, according to the Safety Section of the Association of American Railroads.

In the first seven months of 1937, reports showed 2,433 accidents at grade crossings, an increase of 223 compared with the same period last year. Fatalities resulting from those accidents in the seven months' period in 1937 totaled 998, an increase of 89 compared with the same period one year ago, while the number of persons injured was an increase of 201, there having been 2,776 persons injured in the seven months' period this year.

Fatalities resulting from grade crossing accidents in July totaled 140, an increase of 34 compared with the preceding month this year but a decrease of eleven compared with the same month in 1936. At the same time, 280 persons were injured in July, compared with 267 persons in June, and 305 persons in July, 1936. Reports showed 265 accidents at highway-railroad grade crossings in July, compared with 246 in the preceding month and 281 in July, 1936.

Substitution of Cotton at New Orleans

The Interstate Commerce Commission, Division 3, has found not justified the proposal of the Texas & Pacific and the Lousiana & Arkansas to enlarge the territory from which cotton may be substituted at New Orleans, La., without restriction as to points of origin shown by inbound freight bills. The report, after a discussion of the transit arrangements involved, concludes that approval of the proposed broadening "would be a step in the wrong direction; that it would result in, or open the way for, unjust discrimination and undue prejudice and would establish an unreasonable practice, likely to spread, with a tendency to reduce carrier revenues unnecessarily." The commission adds that "Loose and unrestricted arrangements of this character should be discouraged rather than encouraged."

New York Railroad Club

The next meeting of the New York Railroad Club is to be held on Friday, November 12, at 7:45 p.m. in the auditorium of the Engineering Societies building, 29 West 39th street, New York. The subject will be "A Discussion of the Design and Construction of Cars", accompanied by sound moving pictures illustrating the construction of modern welded freight and passenger cars to be presented by William H. Mussey, research engineer, Pullman-Standard Car Manufacturing Company. Mr. Mussey has made an extensive study of car design, both passenger and freight, in the last three years, including a number of tests in collaboration with members of the A.A.R. Department of Research, and his paper will deal with the design of cars as influenced by these tests.

Nearly 10,000 Air-Conditioned Cars

Nearly 10,000 air-conditioned passenger cars owned by the Class I railroads and the Pullman Company were in operation on October 1, J. J. Pelley, president of the Association of American Railroads, announced on November 5. Class I railroads on October 1 had 5,196, and the Pullman Company had 4,666 air-conditioned passenger cars in operation. These figures include sleeping cars, lounge cars, and other passenger equipment.

In the first nine months of 1937, air-conditioning devices were installed on 1,784 passenger cars, of which 1,270 passenger cars were owned by the railroads and 514 by the Pullman Company. Class I railroads on October 1, this year, had 256 new passenger cars on order compared with 177 on January 1, this year, and 183 on October 1, 1936. The Pullman Company on October 1, this year, had 171 new passenger cars on order.

Stonington to Celebrate Centennial of Connecticut's First Railroad

In celebration of the centennial of the opening of the original railroad between Providence, R. I., and Stonington, Conn., the first railroad to operate in Connecticut, the New Haven and the town of Stonington will, on November 10, join in appropriate ceremonies. Chief of these will be the unveiling of a bronze tablet located upon the old right-of-way of the so-called "Stonington road." C. E. Smith, vice-president, purchases & stores, of the New Haven, will be the principal speaker. There will also be an exhibit of historical railroad material in the parlors of the Stonington Congregational Church, to consist of old time-tables, tickets, posters and other memorabilia.

Shortly after completion of a railroad from Stonington to New London on December 30, 1858, the "Stonington Road" was absorbed by the newly-formed New York, Providence & Boston and became an integral part of the famed "Shore Line". This was leased, in turn, to the New Haven in 1892. But long before this absorption, the Stonington road figured largely in carrying New York to Boston, Mass., traffic, for it was built to connect Providence with a steamboat line running to New York through Long Island Sound. Furthermore, for about a decade, it was an integral part of the rail-water-rail New York-Boston route by which travelers rode on the Long Island to Greenport, N. Y., thence by boat across the sound to Stonington wharf, where they again boarded "steam cars" for Providence and Boston, Mass. Opened in 1844, this traffic arrangement served well its purpose as "The Best Route to Boston" until completion of an all rail route in 1848, which two years later, forced the Long Island to abandon the route and once again concentrate on its local services.

It is expected that members of the Newcomen Society, the New London Railroad Association, the Railway & Locomotive Historical Society and other groups devoted to the tradition of railroading will participate in the ceremony.

Arrangements have been made by the New Haven to make special stops of the "Bay State" from New York and the "Forty-Second Street Express" from Boston, so as to make it convenient for persons from other cities to attend the celebration. For the return journey after the ceremonies, the New York bound "Puritan" and the eastbound "Colonial" also will be stopped at Stonington.

Railroads Assail Stoker Report; Labor Asks for More

Briefs of exceptions to the proposed report of Examiner Homer C. King in the automatic stoker case have been filed with the Interstate Commerce Commission by the railroads and the interested brotherhoods, the former objecting to the examiner's recommended findings and the latter approving but protesting that they do not go far enough. Examiner King's proposed report, which was abstracted in the *Railway Age* of September 25, recommended that automatic stokers be required on large coal-burning locomotives.

The railroad brief is a 107-page document which closes with an expression of confidence that "if the commission gives proper weight to all the evidence, it will find no support for an order requiring the application of stokers on the theory that they contribute to safety as contemplated

by the Locomotive Inspection Act." A fair consideration of the evidence, the brief continues "will demonstrate beyond reasonable doubt that mechanical stokers are not safety devices; also that the operation of hand fired locomotives is in every respect as safe as, and generally indeed, safer than the operation of mechanically fired locomotives." Accordingly, the railroads assert, the examiner should have recommended an order dismissing the brotherhood complaint.

The complainants—A. Johnston, grand chief engineer of the Brotherhood of Locomotive Engineers, and D. B. Robertson, president of the Brotherhood of Locomotive Firemen and Enginemen—"thoroughly endorse" the examiner's deductions "as to the perils of hand firing and the conclusion that the stoker is a safety device." Also, this 86-page brief approves the proposed report's recommendations "as far as they go." It goes on to say, however, that for the reasons which support this endorsement the brotherhoods "are compelled to except to the limited application of stokers which would result." The exception is urged because "it is apparent that the sound reasoning in the report which led to the stoker applications proposed therein results, inevitably, in the applications the complainants would make."

Court Stays I. C. C. New York Warehouse Order

Enforcement of the Interstate Commerce Commission's order in Ex Parte 104, Part VI, concerning New York warehouse and terminal service charges, was suspended by Judge H. B. Chase of the United States Circuit Court of Appeals on November 1, pending appeal to the United States Supreme Court. The Commission's order, which was to have been effective November 13, directed the Baltimore & Ohio, Lehigh Valley, Erie, Pennsylvania, New York Central, Delaware, Lackawanna & Western and the Central of New Jersey to discontinue practices and tariffs relative to New York warehouse and terminal facilities which were found to be less-than-cost and adjudged to constitute virtual rebates to shippers.

It is expected that the case will come before the high court some time next month.

Freight Car Loading

Loading of revenue freight for the week ended October 23, totaled 773,353 cars, a decrease of 36,591 cars or 4.5 per cent below the preceding week, a decrease of 42,889 cars or 5.3 per cent below the corresponding week in 1936, and a decrease of 186,139 cars or 19.4 per cent below the same week in 1930. All commodity classifications except grain and live stock showed decreases under the preceding week, while all commodity classifications except coal, grain and live stock showed decreases under last year. The summary, as compiled by the Car Service Division, Association of American Railroads, follows:

Revenue Freight Car Loading
For Week Ended Saturday, October 23

District	1937	1936	1935
Eastern	156,791	162,712	146,891
Allegheny	144,420	162,085	131,869
Pocahontas ...	56,485	58,411	52,638
Southern	107,503	112,617	97,655
Northwestern .	111,156	123,520	106,732
Central Western	133,499	130,687	116,829
Southwestern ..	63,499	66,210	58,007
Total Western Districts	308,154	320,417	281,568
Total All Roads	773,353	816,242	710,621
Commodities			
Grain and Grain Products	36,958	33,022	33,932
Live Stock	22,395	22,264	20,931
Coal	156,288	154,615	122,096
Coke	8,726	10,334	6,955
Forest Products	32,883	36,301	30,696
Ore	37,990	49,766	32,636
Merchandise L. C. L. ..	169,231	171,093	165,914
Miscellaneous .	308,882	338,847	287,461
October 23 ...	773,353	816,242	710,621
October 16 ...	809,944	826,525	732,304
October 9	815,122	820,570	734,154
October 2	847,245	819,597	705,974
September 25..	840,446	807,243	629,935
Cumulative Total, 43 Weeks	32,284,509	29,456,477	25,995,137

In Canada.—Car loadings for the week ended October 23 totaled 61,349 cars, as against 56,781 cars for the previous week which contained a holiday and 61,388 cars for the week before that, according to the statement of the Dominion Bureau of Statistics. Compared with last year's loadings the total was up 6,167 cars, but that week last year contained the Dominion's Thanksgiving holiday.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada:		
October 23, 1937.....	61,349	27,510
October 16, 1937.....	56,781	25,987
October 9, 1937.....	61,388	26,422
October 17, 1936.....	55,182	24,492
Cumulative Totals for Canada:		
October 23, 1937.....	2,128,905	1,115,676
October 17, 1936.....	1,964,701	966,551
October 19, 1935.....	1,889,968	891,522

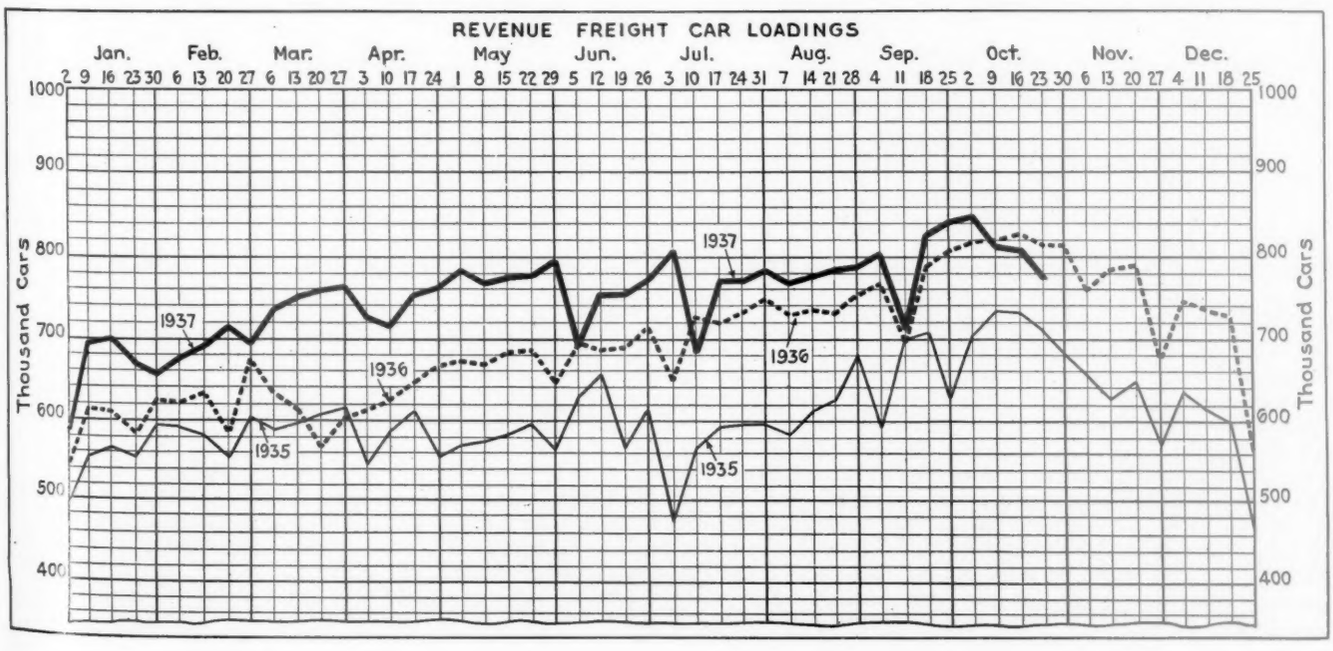
Elkins Act Fines

Fines totaling $22,000 for violations of the Elkins Act have thus far been assessed in cases growing out of the I. C. C. Bureau of Inquiry's recent investigations of practices of dealers in eggs and dairy products at New York. In the latest of these cases four defendants were fined a total of $6,500 on October 29 following pleas of guilty before Judge Forman in the United States District Court at Trenton, N. J.

These four defendants and the fines imposed upon each were: Samuel Levitan (Utah Poultry Producers, Inc.), $1,500; Dairy & Poultry Producers Cooperatives, Inc., $2,000; Breakstone Brothers, Inc., $2,000; the Borden Sales Company, $1,000. All of the foregoing, who are dealers in eggs and poultry products in New York City, the I.C.C. notice says, were charged with having obtained published tariff allowances for drayage in lieu of lighterage on shipments of eggs and dairy products which had been unloaded at Jersey City, N. J., warehouses and there stored, though it was certified that the shipments had subsequently been trucked to Brooklyn.

Wyer Brands Truman's Statement as "Libel"

The hearings of the Senate sub-committee investigating the effects of the Van Swer-



ingen control on the finances of the Missouri Pacific turned into a lively interchange of statements on the part of Senator Truman, acting chairman and William Wyer, secretary-treasurer of the Missouri Pacific, when activities were resumed on October 27. At the morning session on the 27, Senator Truman read into the record a statement which recapitulated the evidence which had previously been offered before the committee and which asserted that Mr. Wyer and other officials of the Van Sweringen empire had obtained loans amounting to millions of dollars from the Reconstruction Finance Corporation on sworn applications, which were, in part, false.

Later, Mr. Wyer obtained permission to read into the record a lengthy statement in which he branded Senator Truman's statement as "misrepresentation, distortion, and libel" and called the Senate hearings "a project for the defamation of character". At the completion of Mr. Wyer's statement, which was read without interruption, Senator Truman said:

"The statement made yesterday was made for the record of this committee. It was based on the records before the committee. It was a true statement and I stand by every word of it".

"I am willing to stand on the record," Mr. Wyer answered.

"So am I," said Senator Truman. "I wrote that statement and it is the truth."

"I doubt it," said Mr. Wyer in a low voice.

The question of whether or not a railroad should borrow to make dividend payments was the subject of discussion when the committee again held hearings on November 3 with William Wyer as the chief witness. Counsel for the committee introduced exhibits in an attempt to show that Wyer had failed to tell the Interstate Commerce Commission where he had obtained funds in 1930 to pay dividends on common stock of the Texas & Pacific, a subsidiary of the Missouri Pacific. A voucher was also introduced which showed that out of a loan of $1,700,000 from J. P. Morgan & Co. the Missouri Pacific received from Texas & Pacific in the form of dividends the sum of $296,287. A part of this money, in turn, was paid to Alleghany Corporation which held a large block of MOP common stock. Senator Truman characterized this transaction as just another case of holding companies reaching out and exacting dividends from wholly-owned subsidiaries to the detriment of the subsidiary. Mr. Wyer denied that Texas & Pacific had borrowed money to pay dividends which were not earned, and defended his action by saying that all that it was doing was borrowing money to release funds from the income account which had been used for capital expenditures.

Senator Truman announced that next week the committee would go into the subject of the debtor's plan of reorganization for the MOP which is now pending before the Interstate Commerce Commission. He also said that the committee hoped to end the Van Sweringen phase of the investigation during next week as it was anxious to look into other railroad holding company set-ups.

Slow Revamping Not Sec. 77's Fault

(*Continued from page 656*)

per cent of gross operating revenues. In 1936, fixed charges required slightly less than 17 per cent of gross operating revenues.

"If my studies have led me to the correct conclusion—and the facts seem completely convincing—the problem of restoring railroad credit today by reducing fixed charges is similar to curing a man of a disease by treating the only part of his anatomy which has materially improved. There can be no doubt that the difference between railroad credit today and at the turn of the century is almost as great as the difference between night and day. Unquestionably, something is radically wrong with railroad credit but the attempts to improve railroad credit by calling on security holders to make the most extensive sacrifices to correct the one factor which would seem to have continuously improved indicate how little real appreciation exists of the true nature of the problem. Many, if not most security holders, do not realize that the troubles of the railroads are not the increasing burden of charges but the declining net earnings available to pay those charges.

"If Section 77 is expected to smooth out these difficulties it would have to be perfect indeed, but the difficulties are even greater than I have indicated because the present market for railroad securities indicates that even if issues should be substantially scaled, a sound credit condition would not be restored.

"The purpose of reorganization, that of restoring sound credit conditions, is meeting serious difficulties today because it is attempting to treat a symptom of the disease and not the malady itself and this malady is not high fixed charges but on the contrary, inadequate earnings. My analysis of the facts conclusively demonstrates to me that the reduction of fixed charges to conform to these low earnings will not restore sound credit conditions in the industry.

"Let me give you an illustration. Let us assume a healthy soldier, weighing 150 pounds and carrying a 60 pound pack. In the course of a training period, it is discovered that he cannot carry the 60 pound pack so it is reduced to 50 pounds. This also is found too heavy and it is reduced to 40 pounds. This is found to be still too heavy and it is again reduced. In lightening his pack, we of course gradually eliminate equipment of value, but the soldier is still having difficulty and we keep on reducing his burden until it gets down to 15 pounds, consisting of merely a rifle and ammunition. Still he is having trouble. The next thing is to throw away his rifle and ammunition. This course obviously meets with resistance and any arguments that one must be realistic and that the pack is still too heavy do not seem to be convincing. The proper course would seem to be not to throw away the rifle and ammunition but to find out what is the matter with a 150 pound soldier who cannot carry a 15 pound load."

Meetings and Conventions

The following list gives names of secretaries, date of next or regular meetings and places of meetings:

AIR BRAKE ASSOCIATION.—R. P. Ives, Westinghouse Air Brake Co., 350 Fifth Ave., New York, N. Y.

ALLIED RAILWAY SUPPLY ASSOCIATION. — J. F. Gettrust, 1108 New Post Office Bldg., Chicago, Ill.

AMERICAN ASSOCIATION OF FREIGHT TRAFFIC OFFICERS.—W. R. Curtis, F. T. R., M. & O. R. R., Chicago, Ill.

AMERICAN ASSOCIATION OF GENERAL BAGGAGE AGENTS. — E. L. Duncan, 816 McCormick Bldg., Chicago, Ill.

AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.—W. C. Hope, C. R. R. of N. J., 143 Liberty St., New York, N. Y. Annual meeting, November 8-9, 1937, Hotel Everglades, Miami, Fla.

AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—F. O. Whiteman, Union Station, St. Louis, Mo. Annual meeting June 7-9, 1938, The Stevens, Chicago, Ill.

AMERICAN ASSOCIATION OF RAILWAY ADVERTISING AGENTS. — E. A. Abbott, Poole Bros., Inc., 85 W. Harrison St., Chicago, Ill. Annual meeting, January 14-15, 1938.

AMERICAN ASSOCIATION OF SUPERINTENDENTS OF DINING CARS.—F. R. Borger, C. I. & L. Ry., 836 S. Federal St., Chicago, Ill.

AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—C. A. Lichty, 319 N. Waller Ave., Chicago, Ill.

AMERICAN RAILWAY CAR INSTITUTE.—W. C. Tabbert, 19 Rector St., New York, N. Y.

AMERICAN RAILWAY DEVELOPMENT ASSOCIATION. —E. J. Hoddy, Louisville & Nashville R. R., Louisville, Ky. Annual meeting, December 2-3, 1937, The Stevens, Chicago, Ill.

AMERICAN RAILWAY ENGINEERING ASSOCIATION. —Works in co-operation with the Association of American Railroads, Engineering Division.—Frank McNellis (Asst. Secy.), 59 E. Van Buren St., Chicago, Ill. Annual meeting, March 15-17, 1938, Palmer House, Chicago, Ill. Exhibit by National Railway Appliances Association, March 14-17, International Amphitheatre, Union Stockyards, Chicago, Ill.

AMERICAN RAILWAY MAGAZINE EDITORS' ASSOCIATION.—M. W. Jones, Baltimore & Ohio R. R., Mt. Royal Station, Baltimore, Md.

AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—G. G. Macina, C. M., St. P. & P. R. R., 11402 Calumet Ave., Chicago, Ill.

AMERICAN SHORT LINE RAILROAD ASSOCIATION.— R. E. Schindler, Union Trust Bldg., Washington, D. C.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS. —C. E. Davies, 29 West 39th St., New York, N. Y.

Railroad Division.—Marion B. Richardson, 21 Hazel Ave., Livingston, N. J.

AMERICAN TRANSIT ASSOCIATION.—Guy C. Hecker, 292 Madison Ave., New York, N. Y.

AMERICAN WOOD PRESERVERS' ASSOCIATION.—H. L. Dawson, 1427 Eye St., N. W., Washington, D. C. Annual meeting January 25-27, 1938, Congress Hotel, Chicago, Ill.

ASSOCIATION OF AMERICAN RAILROADS. — H. J. Forster, Transportation Bldg., Washington, D. C.

Operations and Maintenance Department. —J. M. Symes, Vice-President, Transportation Bldg., Washington, D. C.

Operating-Transportation Division. — L. R. Knott, 59 E. Van Buren St., Chicago, Ill.

Transportation Section.—L. R. Knott, 59 E. Van Buren St., Chicago, Ill.

Freight Station Section.—L. R. Knott, 59 E. Van Buren St., Chicago, Ill.

Operating Section.—J. C. Caviston, 30 Vesey St., New York, N. Y.

Medical and Surgical Section.—J. C. Caviston, 30 Vesey St., New York, N. Y.

Protective Section.—J. C. Caviston, 30 Vesey St., New York, N. Y.

Safety Section.—J. C. Caviston, 30 Vesey St., New York, N. Y.

Telegraph and Telephone Section — W. A. Fairbanks, 30 Vesey St., New York, N. Y.

Engineering Division. — Frank McNellis (Asst. Secy.), 59 E. Van Buren St., Chicago, Ill. Annual meeting, March 15-17, 1938, Palmer House, Chicago, Ill. Exhibit by National Railway Appliances Association, March 14-17, International Amphitheatre, Union Stockyards, Chicago, Ill.

Construction and Maintenance Section. —Frank McNellis (Asst. Secy.), 59 E. Van Buren St., Chicago, Ill. Annual meeting, March 15-17, 1938, Palmer House, Chicago, Ill.

Electrical Section. — Frank McNellis (Asst. Secy.), 59 E. Van Buren St., Chicago, Ill.

Signal Section.—R. H. C. Balliet, 30 Vesey St., New York, N. Y. Annual meeting, April 5-7, 1938,

Continued on next left-hand page

FUNDAMENTALS OF MODERN TRAIN OPERATION

Southern Pacific "Daylight"

High capacity at high speeds is fundamental in modern train operation—both passenger and freight.

This calls for locomotives having:

high boiler pressure
high superheat
generous boiler proportions
large grate area
proper steam distribution
light reciprocating and revolving parts
modern power producing auxiliaries

all combined into a harmonious design.

Modern locomotives having these characteristics reduce the cost for operation and maintenance and assure maximum returns from every train.

LIMA LOCOMOTIVE WORKS LIMA LOCOMOTIVE WORKS INCORPORATED INCORPORATED, LIMA, OHIO

Roosevelt Hotel, New Orleans, La.
Mechanical Division.—V. R. Hawthorne, 59 E. Van Buren St., Chicago, Ill.
Electrical Section.—J. A. Andreucetti (Secy.), C. & N. W. Ry., 1519 Daily News Bldg., 400 W. Madison St., Chicago.
Purchases and Stores Division.—W. J. Farrell, 30 Vesey St., New York, N. Y.
Freight Claims Division.—Lewis Pilcher, 59 E. Van Buren St., Chicago, Ill.
Motor Transport Division.—George M. Campbell, Transportation Bldg., Washington, D. C.
Car-Service Division. — C. A. Buch, Transportation Bldg., Washington, D. C.
Finance, Accounting, Taxation and Valuation Department.—E. H. Bunnell, Vice-President, Transportation Bldg., Washington, D. C.
Accounting Division. — E. R. Ford, Transportation Bldg., Washington, D. C. Annual meeting, 1938, Toronto, Ont.
Treasury Division.—E. R. Ford, Transportation Bldg., Washington, D. C.
Traffic Department.—A. F. Cleveland, Vice-President, Transportation Bldg., Washington, D. C.

ASSOCIATION OF RAILWAY CLAIM AGENTS.—F. L. Johnson, Claim Agent, Alton R. R., 340 W. Harrison St., Chicago, Ill. Annual meeting, May 18-20, 1938, Statler Hotel, St. Louis, Mo.

ASSOCIATION OF RAILWAY ELECTRICAL ENGINEERS.—(See Association of American Railroads.—Mechanical Division.—Electrical Section.)

BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.—W. S. Carlisle, National Lead Company, 900 W. 18th St., Chicago, Ill. Meets with American Railway Bridge and Building Association.

CANADIAN RAILWAY CLUB. — C. R. Crook, 2271 Wilson Ave., N. D. G., Montreal, Que. Regular meetings, second Monday of each month, except June, July and August, Windsor Hotel, Montreal, Que.

CAR DEPARTMENT OFFICERS' ASSOCIATION.—Frank Kartheiser, Chief Clerk, Mechanical Dept., C. B. & Q., Chicago, Ill.

CAR FOREMEN'S ASSOCIATION OF CHICAGO.—G. K. Oliver, 2514 W. 55th St., Chicago, Ill. Regular meeting, second Monday of each month, except June, July and August, La Salle Hotel, Chicago, Ill.

CAR FOREMEN'S ASSOCIATION OF ST. LOUIS, MO.—E. G. Bishop, Illinois Central System, East St. Louis, Ill. Regular meetings, third Tuesday of each month except June, July and August, Statler Hotel, St. Louis, Mo.

CENTRAL RAILWAY CLUB OF BUFFALO.—Mrs. M. D. Reed, 1817 Hotel Statler, McKinley Square, Buffalo, N. Y. Regular meetings, second Thursday of each month except June, July and August, Hotel Statler, Buffalo, N. Y.

EASTERN ASSOCIATION OF CAR SERVICE OFFICERS.—J. T. Bougher, 424 W. 33rd St. (11th floor), New York, N. Y.

INTERNATIONAL RAILWAY GENERAL FOREMEN'S ASSOCIATION.—F. T. James, General Foreman, Delaware, Lackawanna & Western, Kingsland, N. J.

INTERNATIONAL RAILWAY MASTER BLACKSMITHS' ASSOCIATION.—W. J. Mayer, Michigan Central R. R., Detroit, Mich.

MASTER BOILER MAKERS' ASSOCIATION. — A. F. Stiglmeier, 29 Parkwood St., Albany, N. Y.

NATIONAL ASSOCIATION OF RAILROAD AND UTILITIES COMMISSIONERS.—Clyde S. Bailey, 806-808 13th and E Sts., N. W., Washington, D. C. Annual meeting, 1938, New Orleans, La.

NATIONAL RAILWAY APPLIANCES ASSOCIATION.—C. H. White, Room 1826, 208 S. La Salle St., Chicago, Ill. Exhibit at A. R. E. A. Convention, March 14-17, 1938, International Amphitheatre, Union Stockyards, Chicago, Ill.

NEW ENGLAND RAILROAD CLUB. — W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meetings, second Tuesday of each month, except June, July, August and September, Hotel Touraine, Boston, Mass.

NEW YORK RAILROAD CLUB. — D. W. Pye, 30 Church St., New York, N. Y. Regular meetings, third Friday of each month, except June, July, August and September, 29 W. 39th St., New York, N. Y. (November meeting will be held on the second Friday, November 12.)

PACIFIC RAILWAY CLUB.—William S. Wollner, P. O. Box 3275, San Francisco, Cal. Regular meetings, second Thursday of each month, alternately at San Francisco and Oakland, except June at Los Angeles and October at Sacramento.

RAILWAY BUSINESS ASSOCIATION.—P. H. Middleton, First National Bank Bldg., Chicago, Ill. Annual dinner November 18, 1937, The Stevens, Chicago, Ill.

RAILWAY CLUB OF PITTSBURGH.—J. D. Conway, 1941 Oliver Bldg., Pittsburgh, Pa. Regular meetings, fourth Thursday of each month, except June, July and August, Fort Pitt Hotel, Pittsburgh, Pa.

RAILWAY ELECTRICAL SUPPLY MANUFACTURERS' ASSOCIATION.—J. McC. Price, Allen-Bradley Company, 600 W. Jackson Blvd., Chicago, Ill.

RAILWAY FIRE PROTECTION ASSOCIATION.—P. A. Bissell, 40 Broad St., Boston, Mass.

RAILWAY FUEL AND TRAVELING ENGINEERS' ASSOCIATION.—T. Duff Smith, 1255 Old Colony Bldg., Chicago, Ill.

RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.—J. D. Conway, 1941 Oliver Bldg., Pittsburgh, Pa. To meet with Mechanical Division and Purchases and Stores Division, Association of American Railroads.

RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury Battery Company, 30 Church St., New York, N. Y. Meets with Telegraph and Telephone Section of A. A. R.

RAILWAY TIE ASSOCIATION.—Roy M. Edmonds, 903 Syndicate Trust Bldg., St. Louis, Mo.

ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—C. A. Lichty, 319 N. Waller Ave., Chicago, Ill.

SIGNAL APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury Battery Company, 30 Church St., New York, N. Y. Meets with A. A. R., Signal Section.

SOCIETY OF OFFICERS, UNITED ASSOCIATION OF RAILROAD VETERANS. — M. W. Jones, Baltimore & Ohio, Mt. Royal Station, Baltimore, Md.

SOUTHERN AND SOUTHWESTERN RAILWAY CLUB.—A. T. Miller, 4 Hunter St., S. E., Atlanta, Ga. Regular meetings, third Thursday in January, March, May, July, September and November, Ansley Hotel, Atlanta, Ga.

SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—D. W. Brantley, C. of Ga. Ry., Savannah, Ga. Annual meeting, January 27, 1938, Birmingham, Ala.

TOOL FOREMEN SUPPLIERS' ASSOCIATION.—H. W. Leighton (President), H. W. Leighton Company, 565 W. Washington St., Chicago, Ill.

TORONTO RAILWAY CLUB.—D. M. George, P. O. Box 8, Terminal "A," Toronto, Ont. Regular meetings, fourth Monday of each month, except June, July and August, Royal York Hotel, Toronto, Ont.

TRACK SUPPLY ASSOCIATION.—Lewis Thomas, Q. & C. Company, 59 E. Van Buren St., Chicago, Ill. Meets with Roadmasters' and Maintenance of Way Association.

WESTERN RAILWAY CLUB.—C. L. Emerson, C. M., St. P. & P., Chicago, Ill. Regular meetings, third Monday of each month, except June, July, August and September, Hotel Sherman, Chicago, Ill.

Equipment and Supplies

Equipment Orders Drop to 21 Cars

Orders for 21 freight cars comprise October buying; domestic rail market reaches 8,200 tons

Equipment orders have been recorded in October issues of the *Railway Age* (exclusive of the issue of October 2) for 21 freight cars only, there being no purchases of locomotives or passenger-train cars during the month. The total of freight car orders for the year thus far is thereby brought to 47,826 cars, while the 10-month total in the motive power category remains at 278 units—167 steam, 94 Diesel-electric and 17 electric, and in the passenger equipment field at 471 cars. During the corresponding 10 months of 1936, there were recorded orders for 180 locomotives, 38,664 freight cars and 186 passenger-train cars. October itself of that year saw orders booked for 22 locomotives, 1,310 freight and 5 passenger-train cars.

In addition to the foregoing orders, there were, at the end of October of this year, inquiries outstanding or purchases contemplated for 8 steam and 2 Diesel-electric locomotives, 1,917 freight cars and 67 passenger-train cars. In the export field, inquiries were outstanding for 6 steam locomotives for the Chilean State Railways.

Orders for 8,200 tons of rail placed during the month bring the domestic 10-months' total in this market to 100,117 tons. American rolling mills also received a 17,000-ton order from the Chilean State Railways.

LOCOMOTIVES

THE SOUTH MANCHURIA RAILWAY is inquiring for from 25 to 100 locomotives of the 2-8-2 type. The company has offices in New York at 60 East 42nd street.

FREIGHT CARS

THE LOUISIANA & ARKAKSAS is making formal inquiry for from 100 to 300 pulp wood cars.

SIGNALING

THE ERIE has contracted with the Union Switch & Signal Co. to furnish the necessary materials for the installation of a type F electric interlocking at Rutherford, N. J. The layout involves 15 searchlight signals with 12 electric switch movements operated from a 19-lever frame Model 14 interlocking machine, and the order also includes the necessary relays, rectifiers, housings, etc. The field work will be carried out by the railroad company's forces.

ATCHISON, TOPEKA & SANTA FE.—The Electro-Motive Corporation has placed an order with the Union Switch & Signal Co., for seven sets of automatic train control equipment, for installation on seven Diesel-electric locomotives now building for the Atchison, Topeka & Santa Fe. These locomotives are to be used in passenger train service between Chicago and Los Angeles, Cal., and over train control territory between Pequot, Ill., and Ft. Madison, Iowa. This train control equipment will be similar to that now in service on Santa Fe locomotives and comprises a three-indication continuous cab signal and three-speed train control system.

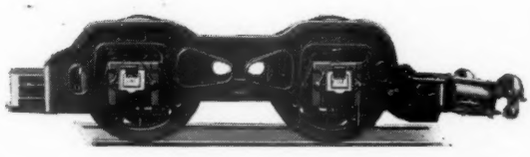
Domestic Equipment Orders Reported in Issues of The Railway Age in October, 1937

FREIGHT CARS

Date	Name of company	No.	Type	Builder
Oct. 16	Barrett Company	15	Tank	General American Tank Car Corp.
Oct. 23	St. Louis-San Francisco.....	6	Well	American Car & Foundry

Continued on next left-hand page

"Say, feller, you look as rested as you feel or else that mirror is kidding me. It's the same way every time I ride this train—never wake up once all night long. It starts so easy and smooth I never notice it. Must tell the other boys about it." » » » Booster-equipped locomotives make smoother starting and create passenger good-will.



FRANKLIN RAILWAY SUPPLY COMPANY, INC.

NEW YORK CHICAGO MONTREAL

Supply Trade

C. D. Hicks, St. Louis, Mo., has been appointed special Mexican representative of the **Stupp Bros. Bridge & Iron Company,** St. Louis.

The Allied Equipment Company, Oklahoma City, Okla., has been appointed agents for welders and welding electrodes for the **Harnischfeger Corporation,** Milwaukee, Wis.

The Howard S. Johnson Supply Company, First National Bank building, St. Paul, Minn., now represents the **Ewald Iron Company, Inc.,** Louisville, Ky., in the Twin Cities territory.

The Gustin-Bacon Manufacturing Company, Kansas City, Mo., now has its eastern division headquarters in the New York Central building, 230 Park avenue, New York.

Bruce M. Jones has been transferred from Beaver Falls, Pa., to the New York office of the **Babcock & Wilcox Tube Company.** Mr. Jones was formerly with the Symington Company, Gould Coupler Company and Ross Meehan Foundries.

A. B. Crawford has been appointed manager of railway sales of the **Continental Roll & Steel Foundry Co.,** with headquarters in its Pittsburgh, Pa., office. Mr. Crawford, who has been active in steel castings sales for many years, was first connected with the Duquesne Steel Foundry Company and continued with the Continental Company, which was formed in 1930 by a merger of the Duquesne Company with the Hubbard Steel Foundry Company, East Chicago, Ind., and the Wheeling Mold & Foundry Co., Wheeling, W. Va. Mr. Crawford is a graduate of Carnegie Institute of Technology, class of 1916. **James L. Cawthon, Jr.,** until recently Pittsburgh district manager of sales, American Steel Foundries, has become affiliated with the Continental Roll & Steel Foundry Co., as sales engineer, with headquarters at Pittsburgh. Mr. Cawthon is a graduate of the University of Alabama, class of 1918.

Construction

GRAND TRUNK WESTERN.—The Michigan State Highway Department has awarded a contract to W. J. Storen, Detroit, Mich., for work in connection with the construction of subways to carry John R street and Seven Mile road under the tracks of the Grand Trunk Western. The work involved in this contract includes the construction of two grade separation structures, general excavation and the construction of temporary railroad trestles. The cost of the work involved in the contract will be about $383,000. (See *Railway Age* of October 16, page 545.)

Financial

APACHE.—*Bonds.*—The Interstate Commerce Commission, Division 4, has authorized this company to issue $900,000 of refunding first mortgage 5 per cent income bonds, to be delivered to the Southwest Lumber Mills, Inc., in exchange for $600,000 of the applicant's first mortgage 5 per cent gold bonds, due July 1, 1938, and its matured second mortgage 6 per cent note for $455,000.

ASHLEY, DREW & NORTHERN.—*Stock.*—This company has applied to the Interstate Commerce Commission for authority to reduce its authorized capital from $600,000 to $300,000 under a plan for the exchange of 12,000 shares of new stock ($25 par) for the 5,000 shares ($100 par) now outstanding. The change is designed to meet the conditions imposed when the commission in its order of September 9 authorized the road to issue $400,000 of 5 per cent first mortgage bonds.

CHICAGO, BURLINGTON & QUINCY.—*Equipment Trust Certificates.*—The Interstate Commerce Commission, Division 4, has authorized this company to assume liability for $3,650,000 of 2½ per cent equipment trust certificates, maturing in 10 equal annual installments of $365,000 on October 1, in each of the years from 1938 to 1947. The issue has been sold at 100.277 to a group composed of Salomon Brothers & Hutzler, Dick & Merle-Smith, and Stroud & Co., Inc., making the average annual interest cost approximately 2.445 per cent.

FONDA, JOHNSTOWN & GLOVERSVILLE.—*Reorganization.*—The Interstate Commerce Commission, Division 4, has ordered that public hearings in the reorganization of this company be held before Examiner R. T. Boyden, at the office of the commission in Washington, D. C., on November 12. The commission has also ordered that a protective committee composed of F. J. Lisman, Lucius N. Littauer, Joseph H. Loeffler and William G. Edinburg, be permitted to intervene in the reorganization proceedings of this company.

GEORGIA & FLORIDA.—*Receivers' Financing.*—The Interstate Commerce Commission, Division 4, has dismissed the application of the receivers for approval of the purchase by the Reconstruction Finance Corporation of $150,000 of the receivers' first lien equipment certificates.

ILLINOIS CENTRAL.—*Extension of R.F.C. Loan.*—This company has asked the Interstate Commerce Commission to approve the extension from December 7 to June 1, 1939, of a loan of $7,758,000 from the Reconstruction Finance Corporation which matured on May 1, 1936.

MISSOURI PACIFIC. — *Reorganization.* — The Interstate Commerce Commission, Division 4, has authorized the Missouri Southern to intervene in the reorganization proceedings of this company.

MARION & SOUTHERN.—*Abandonment.*—The Interstate Commerce Commission, Division 4, has authorized this company to abandon as to interstate and foreign commerce its entire line extending from a connection with the Raleigh & Charleston at a point about 0.5 mile north of Marion, S. C., to its terminus at West Marion, 2.7 miles.

MINNEAPOLIS & ST. LOUIS.—*Receivers' Certificates.*—The Interstate Commerce Commission, Division 4, has authorized the co-receivers to issue $805,800 of receivers' certificates to renew or extend maturing certificates of like amount. The certificates will bear interest at the rate of 4½ per cent and will mature not later than two years from the date of issue.

NEW YORK CENTRAL.—*Abandonment.*—The Interstate Commerce Commission, Division 4, has authorized this company to abandon the operation and the Beech Creek Extension to abandon that part of its Boardman branch line extending from Carnwath, Pa., to the end of the branch, 2.3 miles.

NEW YORK CENTRAL.—*Abandonment.*—The Interstate Commerce Commission, Division 4, has authorized this company to abandon the operation and the Beech Creek to abandon the line extending from Mitchells, Pa., to Curry Run, 14.6 miles and part of a branch line at Wigton, Pa., 0.3 mile.

NEW YORK, NEW HAVEN & HARTFORD.—*Reorganization.*—The Interstate Commerce Commission, Division 4, has authorized Irving A. Sartorius, George G. Milne, Max S. Weil and Jay J. Livingston to intervene in the reorganization proceedings of this company.

NORFOLK & WESTERN.—*Abandonment.*—The Interstate Commerce Commission, Division 4, has authorized this company to abandon its so-called Speedwell extension, extending from Speedwell Junction, Va., to Speedwell, 16.5 miles, toegther with its appendant Norma branch, extending 1.4 miles southward from Cripple Creek, Va.

TEXAS & PACIFIC.—*Equipment Trust Certificates.*—The Interstate Commerce Commission, Division 4, has authorized this company to assume liability for $1,275,000 of 2¾ per cent equipment trust certificates, maturing in 15 equal annual installments of $85,000 on November 1, of each year from 1938 to 1952. The issue has been sold at 100.434 to a group composed of F. S. Moseley & Co., Kean, Taylor & Co., and R. W. Pressprich & Co., making the average annual interest cost to the company approximately 2.703 per cent.

Average Prices of Stocks and Bonds

	Nov. 3	Last week	Last year
Average price of 20 representative railway stocks..	32.92	33.85	59.56
Average price of 20 representative railway bonds..	69.82	69.78	83.20

Dividends Declared

Bangor & Aroostook—62¢, quarterly; Preferred, $1.25, quarterly, both payable January 1 to holders of record November 30.

Great Northern—Preferred (resumed), $2.00, payable December 20 to holders of record December 1.

Norfolk & Western—$2.50, quarterly, payable December 22 to holders of record December 3.

Reading—1st Preferred, 50¢, quarterly, payable December 9 to holders of record November 18.

Continued on next left-hand page

NO. 39 OF A SERIES OF FAMOUS ARCHES OF THE WORLD

WHARNCLIFFE VIADUCT

HANWELL, ENGLAND

The Wharncliffe Viaduct on the route of the Great Western Railway at Hanwell, England, consists of eight semi-elliptical brick arches of 70 feet span springing from stone-capped piers. The base area of these piers is 252 square feet. This Viaduct was constructed one hundred years ago, 1836-1837. It is 896 feet in length and 65 feet high. It was named after Lord Wharncliffe as a compliment to the Chairman of the House of Lords Committee which authorized the railroad. This viaduct, originally constructed for two lines of way, was widened to take four tracks in 1875.

* * *

A complete Security Brick Arch in the locomotive firebox is essential to full fuel economy. To facilitate locomotive arch maintenance, the American Arch Company maintains an adequate stock of Security Arch Brick at conveniently located points throughout the country.

THERE'S MORE TO SECURITY ARCHES THAN JUST BRICK

HARBISON-WALKER REFRACTORIES CO.

Refractory Specialists

AMERICAN ARCH CO.
INCORPORATED

Locomotive Combustion Specialists » » »

Railway Officers

EXECUTIVE

Hal Gaylord, assistant to the president of the Kansas City Southern, with headquarters at Kansas City, Mo., at his own request retired from active service on November 1.

G. H. Jacobus, division superintendent on the Northern Pacific, with headquarters at Duluth, Minn., has been elected president of the Lake Superior Terminal & Transfer Railway Company, with the same headquarters.

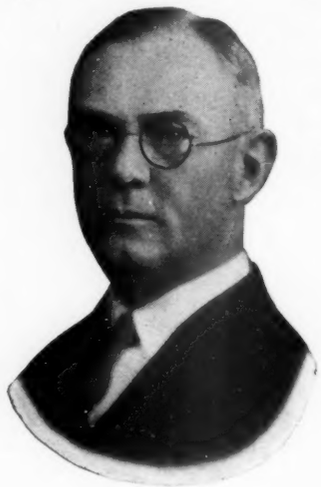
Pursuant to an order of Berryman Henwood, trustee of the St. Louis Southwestern, the St. Louis Southwestern of Texas, the Central Arkansas & Eastern, and the Stephenville North & South Texas, **Daniel Upthegrove,** president of these companies, has been appointed chief executive officer, and **F. W. Green,** vice-president of the Cotton Belt, has been appointed chief operating officer, both with headquarters as before at St. Louis, Mo. This order became effective on November 1.

Rollin Henry Wilbur, vice-president and general manager of the Lehigh & New

Rollin Henry Wilbur

England, with headquarters at Philadelphia, Pa., retired on November 1, after 50 years of railroad service, which began in 1884 as clerk in the office of the general superintendent of the Lehigh Valley at South Bethlehem, Pa. He was born at Bethlehem, Pa., on September 3, 1863, and was educated at Mt. Pleasant Military Academy, Ossining, N. Y., and Lehigh University, Bethlehem. From 1886 to 1888, Col. Wilbur served as assistant to general superintendent of the Lehigh Valley and from 1888 to 1892 as assistant to vice-president. From April to September, 1892, he served as assistant to the general manager of the Philadelphia & Reading and for the next year as assistant to vice-president, then becoming general division superintendent. He was general division superintendent of the Lehigh Valley from 1893 to 1894; general superintendent from 1894 to 1903 and general manager from 1903 to 1904. Col. Wilbur became vice-president and general manager of the Lehigh & New England in October, 1907, the position he held until his retirement. He served two terms, expiring April, 1904, on the executive committee of the American Railway Association.

G. B. Wood, freight traffic manager of the Kansas City Southern, effective November 1, was appointed vice-president in



G. B. Wood

charge of traffic, with headquarters as before at Kansas City, Mo., to succeed **H. A. Weaver,** who retired voluntarily on that date.

Mr. Wood's service with the Kansas City Southern dates back 38 years. He was born at Hot Springs, Ark., on November 3, 1878, and graduated from the University of Arkansas in 1899. In that year he entered railway service as a clerk in the traffic department of the Kansas City Southern, subsequently being advanced through various positions, including those of commercial agent, general agent and assistant general freight agent. In May, 1917, Mr. Wood was promoted to assistant to the president, with headquarters at Kansas City. In 1928, he was made general freight agent with the same headquarters and on May 1, 1929, he was further promoted to freight traffic manager in charge of solicitation, which position he

H. A. Weaver

held until his recent appointment to the vice-presidency.

Mr. Weaver has been identified with the Kansas City Southern for more than 39 years. He was born on June 17, 1873, at Keithsburg, Ill., and after a public school education he entered railway service with the Atchison, Topeka & Santa Fe in 1893 as a clerk in the general freight department. In September, 1898, he entered the service of the Kansas City, Pittsburgh & Gulf (now the Kansas City Southern), where he was advanced through various positions to that of assistant general freight agent in 1903. He was further promoted to general freight agent at Kansas City in 1920 and on May 1, 1929, he was advanced to freight traffic manager. On June 1, 1929, Mr. Weaver was elected vice-president in charge of traffic, which position he held until his retirement.

FINANCIAL, LEGAL AND ACCOUNTING

T. S. Conroy, chief clerk to the superintendent of car service of the Minneapolis, St. Paul & Sault Ste. Marie, the Duluth, South Shore & Atlantic and the Mineral Range, has been appointed car accountant of these lines, with headquarters at Minneapolis, Minn.

Donald C. Wilson, assistant treasurer of the Eastern Lines of the Atchison, Topeka & Santa Fe, with headquarters at Topeka, Kan., has been made assistant treasurer of the A. T. & S. F. and the Gulf, Colorado & Santa Fe, with headquarters at New York, to succeed **C. K. Cooper,** who has resigned. Mr. Wilson's appointment became effective on October 26.

OPERATING

H. C. Rochester has been appointed general car accountant of the Canadian National, with headquarters at Montreal, Que., succeeding **H. A. Balkwill,** who has retired.

E. E. McDaniels, trainmaster on the Pennsylvania, with headquarters at Indianapolis, Ind., has been promoted to supervisor of service with headquarters at St. Louis, Mo., to succeed **Edgar W. Perrott,** whose death on October 13 was reported in the *Railway Age* of October 23.

Arthur C. Shields, general manager of the Denver & Rio Grande Western, with headquarters at Denver, Colo., has been appointed to the newly-created position of special assistant to the trustees. **Edward A. West** has been appointed general manager to succeed Mr. Shields.

Carroll W. Ashby, trainmaster on the Danville division of the Southern, with headquarters at Greensboro, N. C., who has been promoted to superintendent of the St. Louis-Louisville divisions, with headquarters at Louisville, Ky., as reported in the *Railway Age* of October 30, has spent 17 years with the Southern. He was born on June 5, 1897, at Alexandria, Va., and obtained his higher education at Kingston Collegiate Institute, Kingston, Ont., graduating in 1916. He entered the service of the Southern on October 1, 1920, as a clerk

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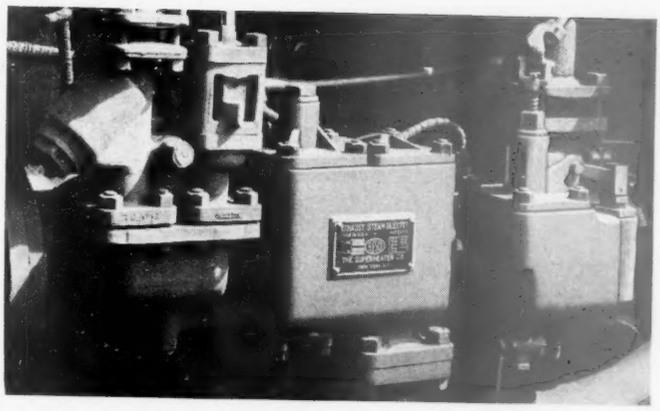

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in the treasury department, and on October 27, 1927, he was transferred to the operating department as assistant trainmaster of the Columbia division, being appointed general yardmaster at Charleston, S. C., on May 29, 1929. Mr. Ashby was transferred to Monroe, Va., on November 30, 1931, and on June 25, 1934, he was promoted to trainmaster of the Danville division, the position he was holding at the time of his recent appointment as superintendent of the St. Louis-Louisville divisions, which was effective on October 22.

Effective November 1, a rearrangement of the divisions of the Minneapolis, St. Paul & Sault Ste. Marie was effected. The territory formerly under the jurisdiction of the Wisconsin & Peninsula division and the Duluth-Superior Terminals was divided into two divisions to be known as the Minneapolis-Duluth division and the Gladstone division. Included in the Minneapolis-Duluth division is the territory between Minneapolis, Minn., and Weyerhauser, Wis., and that between Dresser Junction, Wis., and Duluth, Minn., together with branches. The Gladstone division includes the territory between Weyerhauser and Sault Ste. Marie and between Wisconsin Junction, Wis., and Neemah, and branches. In addition, the Winnipeg division has been extended to include the Duluth-Superior division, excluding the Duluth-Superior Terminals, the Minnesota division has been extended to include the Missouri River division, and the Stevens Point division has been extended to include the Fond du Lac and Chicago Terminal divisions.

Coincident with this rearrangement of divisions, **J. R. Branley,** superintendent of the Wisconsin & Peninsula division, with headquarters at Minneapolis, Minn., was appointed acting general superintendent with the same headquarters, to succeed **E. H. Buhlman,** who has been assigned to other duties. **E. D. Jones,** superintendent of the Duluth-Superior division with headquarters at Superior, Wis., was appointed superintendent of the new Minneapolis-Duluth division with the same headquarters, and **A. C. Peterson,** superintendent of the Winnipeg division, with headquarters at Thief River Falls, Minn., was appointed superintendent of the new Gladstone division, with headquarters at Gladstone, Mich. **C. L. Simpson,** superintendent of the Stevens Point division, with headquarters at Stevens Point, Wis., will remain as superintendent of the enlarged Stevens Point division, and **H. A. Sparks,** superintendent of the Minnesota division, was appointed assistant superintendent of the Stevens Point division with headquarters at Fond du Lac. **W. W. Wade,** superintendent of the Fond du Lac division, with headquarters at Fond du Lac, was appointed superintendent of the enlarged Winnipeg division, with headquarters at Thief River Falls, succeeding Mr. Peterson. **B. G. Cross,** superintendent of the Missouri River division, with headquarters at Bismarck, N. D., was appointed superintendent of the enlarged Minnesota division with headquarters at Enderlin, N. D., succeeding Mr. Sparks. **W. H. Clausen** was appointed trainmaster, with headquarters at Enderlin.

TRAFFIC

A. J. Kitz, chief clerk in the New York office of the Seaboard Air Line, has been appointed district passenger agent, with the same headquarters. **Walter G. Byrom,** traveling passenger agent at Chicago, has been promoted to the office of district passenger agent. **I. J. Hetherington** has been appointed general agent at Baltimore, succeeding **J. D. Dawson.**

C. H. Dege has been appointed assistant general freight agent of the Gulf, Mobile & Northern, with headquarters at Mobile, Ala.

A. W. May, commercial agent at Oakland, Cal., for the Denver & Rio Grande Western, has been appointed to the newly-created position of general agent at the same point, and the position of commercial agent has been abolished.

J. F. Scanlin has been appointed general agent, freight department, New York Central System, with headquarters at Milwaukee, Wis., to succeed **A. W. Morgan,** transferred. **George H. Johnston** has been appointed division freight agent, with headquarters at Grand Rapids, Mich., to succeed **I. Greenbaum,** retired.

D. Kirkpatrick has been appointed assistant general freight agent of the Southern, assigned to the office of the vice-president at Washington, D. C., succeeding **R. E. Boyle, Jr.,** who has been transferred in the same capacity to Atlanta, Ga., to succeed **F. A. Bailey,** appointed assistant general freight and passenger agent at Macon, Ga., to succeed **R. L. Butt.**

A. T. Stovall, Jr., assistant freight traffic manager on the Southern, with headquarters at Mobile, Ala., has been promoted to assistant traffic manager, with headquarters at St. Louis, Mo., to succeed **K. B. Hannigan,** who has retired after 40 years of service with this company. **Richard L. Butt,** assistant general freight agent, with headquarters at Macon, Ga., has been promoted to assistant freight traffic manager at Mobile, to succeed Mr. Stovall.

R. S. Boston, traffic manager of the Alton & Southern, with headquarters at St. Louis, Mo., effective November 1, assumed the duties of the late **E. Woodward,** general traffic manager, but will continue to have the same title. Effective the same date, **R. M. Hill,** general agent at Kansas City, Mo., was appointed to the newly-created position of assistant traffic manager, in which capacity he will succeed to the duties of Mr. Boston. **F. H. Meyer,** commercial agent at Kansas City, has been promoted to general agent, with the same headquarters, to succeed Mr. Hill. **H. A. Soeker,** commercial agent at Memphis, Tenn., has been appointed to the newly-created position of general agent, with the same headquarters, and the position of commercial agent has been abolished.

Joseph E. Redman, general traffic agent of the New York, New Haven & Hartford and its subsidiaries, the New England Steamship Company and the New England Transportation Company, with headquarters at New York, retired from active service on October 31, at his own request, after more than 49 years of continuous service. **R. E. Burns,** assistant general traffic agent at New York, has been appointed general traffic agent, with the same headquarters.

Mr. Redman was born in New York on December 13, 1873, and attended Normal Training School and the College of the City of New York. On July 12, 1888, he entered the service of the Providence & Stonington Steamship Company as an office boy, subsequently serving in various clerical capacities, and for two years was freight clerk on the steamers. In 1897 he was appointed cashier at Pier 36, North River. In May, 1898, he saw service in Cuba as a sergeant, 71st New York Infantry, returning to his position as cashier in January, 1899. In 1902 he was promoted to chief clerk and in December, 1907, he was appointed freight agent of the New London & New Bedford Lines at Pier 40, North River, holding that position until 1917, when he was appointed agent at Pier 14, North River. On January 1, 1920, Mr. Redman was appointed assistant general freight agent of the New York, New Haven & Hartford and general freight agent of the New England Steamship Company, holding that position until December, 1930, when he became general freight agent for both companies. In December, 1934, Mr. Redman was appointed general traffic agent.

W. Arnold Kember, assistant to the general freight traffic manager of the Canadian National, with headquarters at Montreal, Que., has been appointed general freight agent, Canadian National Grand Trunk, with headquarters at Boston. He succeeds **H. A. Carson,** who has been appointed general manager of the Central Vermont. Mr. Kember began his railroad career as a stenographer in the general freight department of the Central

W. Arnold Kember

Vermont at St. Albans, Vt., in June, 1908, later being appointed secretary to the general freight agent. In August, 1911, Mr. Kember went to Winnipeg, Man., serving successively as secretary, rate clerk and chief clerk in the general freight department of the Grand Trunk Pacific. In Oc-

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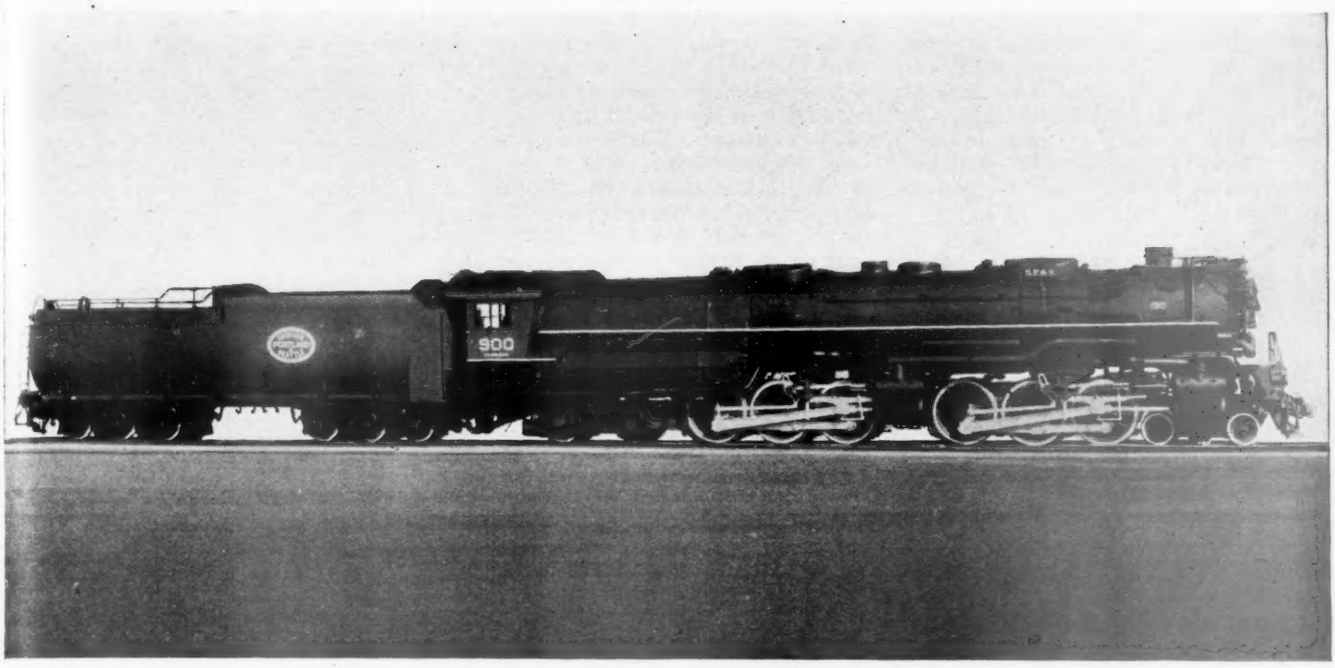

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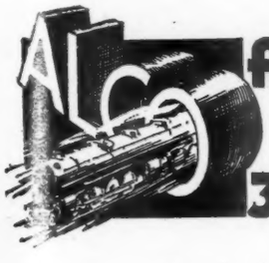

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tober, 1920, he was appointed city freight agent of the Canadian National at Port Arthur, Ont., and in January, 1927, was transferred to Montreal as chief clerk to the general freight traffic manager. In August, 1928, he was promoted to assistant to the general freight traffic manager, which position he held under his present appointment.

Elbert L. Whitney, general freight agent, New York Central System, with headquarters at Chicago, who has been promoted to assistant freight traffic manager, with the same headquarters, as reported in the *Railway Age* of October 23, was born at Columbus, Ohio, and obtained his first railroad experience with the Baltimore & Ohio at Columbus. Early in 1900, Mr. Whitney entered the service of the Toledo, St. Louis & Western (now part of the New York, Chicago & St. Louis) at Toledo, Ohio, and in 1908 he became connected with the Pittsburgh & Lake Erie (part of the New York Central System), with headquarters at Pittsburgh, Pa. In 1910, Mr. Whitney was sent to Chicago as chief clerk to the assistant freight traffic manager of the New York Central Lines. In 1922 he was appointed assistant to the vice-president of the Indiana Harbor Belt, the Chicago Junction and the Chicago River & Indiana, continuing in that position until November, 1928. During this period Mr. Whitney was closely identified with the industrial development, from a railroad standpoint, of the Central Manufacturing

Elbert L. Whitney

District at Chicago. In 1928 he became general coal and ore agent of the New York Central, West of Buffalo, and in 1931 he was made freight traffic manager of the same lines, with headquarters at Chicago. In 1932 Mr. Whitney was made general freight agent of the New York Central, West of Buffalo, and on June 1, 1935, he was appointed to the same position for the entire system. He was holding this position at the time of his appointment as assistant freght traffic manager, which will become effective on November 1.

Arnold W. Morgan, who has been appointed general freight agent of the Indiana Harbor Belt, with headquarters at Chicago, as reported in the *Railway Age* of October 23, was born on November 29, 1892, at Columbia, Ill. He first entered the service of the New York Central Lines in August, 1907, as a messenger boy in the local office at East St. Louis, Ill. Advancing through various positions, he was made soliciting freight agent in the office of the assistant general freight agent at St. Louis, Mo., on November 6, 1916, holding this position until February 28, 1918, when he left to enter military service. Mr. Morgan served a year in France, returning

Arnold W. Morgan

on August 20, 1919. In April, 1920, he was appointed traveling freight agent on the Evansville, Indianapolis & Terre Haute (part of the New York Central Lines), at Terre Haute, Ind. In October of the same year, he returned to St. Louis as traveling freight agent. On June 1, 1928, Mr. Morgan was appointed general agent, with headquarters at Houston, Tex., where he remained until July 1, 1933, when he was transferred to Milwaukee, Wis. He was located at the latter point at the time of his recent promotion to general freight agent of the I.H.B. at Chicago. A the time of his recent appointment Mr. Morgan was serving as president of the Milwaukee Traffic Club, Inc.

ENGINEERING AND SIGNALING

T. Z. Krumm, chief engineer of the Minneapolis, St. Paul & Ste. Marie, with office at Minneapolis, Minn., has had his jurisdiction extended over all matters pertaining to maintenance of way.

Harry Pollard, general fire inspector of the Southern Pacific, Pacific Lines, with headquarters at San Francisco, Cal., retired from active service on November 1, after 40 years of service with this company.

W. G. Powrie, engineer of water service of the Chicago, Milwaukee, St. Paul and Pacific, with headquarters at Chicago, in addition to his other duties, has been appointed assistant superintendent track maintenance, effective November 1. **A. Daniels,** assistant superintendent track maintenance, with headquarters at Chicago, has been appointed division engineer of the Twin City Terminal and of the Iowa & Southern Minnesota division, with headquarters at Minneapolis, Minn., to succeed **E. W. Bolmgren,** who has been transferred to the La Crosse & River division, with headquarters at La Crosse, Wis. Mr. Bolmgren succeeds **H. B. Christianson,** who has been transferred to the Dubuque & Illinois division, with headquarters at Savanna, Ill., where he succeeds **C. E. Crippen,** who has been appointed assistant engineer in the office of the chief engineer at Chicago.

MECHANICAL

F. S. Robbins, superintendent motive power of the Atlantic Coast Line, has been appointed general superintendent motive power, with headquarters as before at Wilmington, N. C., succeeding **James Paul,** who retired on November 1. A photograph of Mr. Robbins and a biographical sketch of his railway career were published in the *Railway Age* of October 9, in connection with his appointment as superintendent motive power.

Effective November 1, **E. M. Wilcox,** superintendent of equipment for the New York Central System, with headquarters at Chicago, was appointed assistant superintendent of equipment, with the same headquarters, and the position of superintendent of equipment was abolished. **Joseph Chidley,** superintendent of equipment of the New York Central, West of Buffalo, and the Ohio Central Lines, with headquarters at Cleveland, Ohio, has had his jurisdiction extended to include the Western division of the N.Y.C., and **J. F. Jennings,** superintendent of equipment of the Michigan Central, with headquarters at Detroit, Mich., has had his jurisdiction extended to include the West division of the M.C.

Karl F. Nystrom, superintendent of the car department of the Chicago, Milwaukee, St. Paul & Pacific, has been appointed mechanical assistant to the chief operating officer, with headquarters as before at Milwaukee, Wis. **Joseph A. Deppe,** assistant superintendent of the car department, has been promoted to superintendent of the car department, with headquarters also as before at Milwaukee, to succeed Mr. Nystrom. These appoint-

Karl F. Nystrom

ments became effective on November 1. In his new position Mr. Nystrom will continue to have general supervision over the

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car department and in addition will supervise engineering, designing, construction and co-ordination of facilities in the mechanical department.

Mr. Nystrom was born in Sweden in September, 1881, and was educated as a

Joseph A. Deppe

mechanical engineer at a Swedish university. Coming to the United States in 1905, he entered the service of the Pressed Steel Car Company as a draftsman, serving with this company until 1909, when he left to join the engineering staff of the Pullman Company. After a short period of service with the latter company he became connected with the Southern Pacific in the car design department, leaving this company in 1911 to become assistant mechanical engineer of the American Car & Foundry Company. Shortly thereafter he became mechanical engineer of the Acme Supply Company, and in 1913 he became chief draftsman in the car department of the Grand Trunk (now part of the Canadian National). From 1918 to 1920 he served as chief draftsman in the car department of the Canadian Pacific, returning to the Grand Trunk at the end of this period as engineer of car construction. In 1922 he entered the service of the Milwaukee as engineer of car design, being advanced to engineer of motive power and rolling stock in 1925. For a few months in 1927 Mr. Nystrom served as master car builder of the Milwaukee, then being appointed superintendent of the car department, which position he held until his recent appointment as mechanical assistant to the chief operating officer. Mr. Nystrom is president of the Car Department Officers Association.

Mr. Deppe has been associated with the Milwaukee for more than 35 years. He entered the service of this company in April, 1902, as a helper, later serving as an inspector, billing clerk, and chief clerk to master car builder. In March, 1918, he was promoted to assistant to master car builder and after two years in this capacity he was further advanced to general supervisor of the freight car shop department. In December, 1920, Mr. Deppe was made assistant master car builder and in August, 1927, he was promoted to assistant superintendent of the car department, which position he was holding at the time of his recent appointment as superintendent of the car department.

J. M. Brophy, who has been appointed superintendent of the car department of the Illinois Central, with headquarters at Chicago, as reported in the *Railway Age* of October 30, has been in the service of this company for more than 24 years. During the early years of this period he served as a car repair inspector, air-brake inspector and assistant foreman at Ft. Dodge, Iowa, and Waterloo. In June, 1916, he was transferred to Paducah, Ky. From August, 1917, to March, 1919, he was in the service of the United States Army, returning to the Illinois Central after the war as an inspector, in which capacity he served at Paducah and Owensboro, Ky. In May, 1921, Mr. Brophy was appointed coach foreman at Louisville, Ky., and in December, 1928, he was made general car foreman at the same point. After a year in the latter capacity he was assigned to a similar position at the Burnside shops, Chicago, where he served until March, 1934, when he was further promoted to car shop superintendent. He was holding

J. M. Brophy

this position at the time of his appointment as superintendent of the car department, effective November 1.

PURCHASES AND STORES

G. W. Leigh, purchasing agent of the Minneapolis, St. Paul & Sault Ste. Marie, the Duluth, South Shore & Atlantic and the Mineral Range, has been appointed purchasing agent and general storekeeper of these roads, with offices at Shoreham (Minneapolis, Minn.), and **J. B. Noyes,** general storekeeper, has been appointed assistant purchasing agent and general storekeeper, with offices also at Shoreham. These appointments became effective on November 1.

MOTOR TRANSPORT

J. M. Kurn, co-trustee of the St. Louis-San Francisco, has been named president of the Frisco Transportation Company, a subsidiary of the railroad, which was created for the purpose of establishing a co-ordinated rail and motor service between stations of the railway and inland points. Other officers of the railroad who were named as officers of the transportation company are: **J. R. Koontz,** vice-president in charge of traffic; **H. L. Worman,** vice-president in charge of operation; **L. O. Williams,** secretary and treasurer; **J. R. Coulter,** general traffic manager; **W. L. English,** general manager; **G. B. Perkins,** auditor; and **M. G. Roberts,** counsel. All these officers except Mr. English, whose headquarters are in Springfield, Mo., have offices at St. Louis, Mo.

OBITUARY

C. W. Andrews, who retired in 1936 as general agent for the Chicago, Burlington & Quincy at Dallas, Tex., died on October 26 at Dallas.

Paul Heitmann, auditor of the Grand Trunk Western, with headquarters at Detroit, Mich.; died at his home at Royal Oak, Mich., on October 25.

W. H. Andrews, general agent of the Midland Valley, the Kansas, Oklahoma & Gulf, and the Oklahoma City-Ada-Atoka, at Los Angeles, Cal., died on October 25 as a result of injuries incurred in an accident.

Charles T. McLellan, who retired in 1919 as a division superintendent on the Eastern Lines of the Atchison, Topeka & Santa Fe, died at his home at Topeka, Kan., on September 14, at the age of 91 years.

Thomas L. Terrant, president and general manager of the River Terminal Railway at Cleveland, Ohio, died on October 22 at St. Luke's Hospital, Cleveland, following a heart ailment of a month. Mr. Terrant had been connected with the River Terminal for 20 years. He was born on May 7, 1882, at Princess Anne, Va., and started his railroad career with the Baltimore & Ohio at Baltimore, Md., in 1901 as a messenger. He served successively as yard clerk, yardmaster, car distributor, assistant superintendent and was division superintendent at Cincinnati, Ohio, when he left in October, 1917, to become superintendent of the River Terminal. In May, 1934, he was promoted to vice-president and general manager of the River Terminal, and was further advanced to president and general manager in March, 1935.

James P. Main, general manager of the Detroit & Toledo Shore Line, with headquarters at Detroit, Mich., died on October 20, of injuries received in an automobile accident which occurred while he was returning from a business trip to Toledo. Mr. Main was 67 years old. He was born in Portland, Me., and first entered railway service in August, 1885, as an office boy in the audit office of the Grand Trunk (now the Canadian National) at Detroit. In September, 1886, he was transferred to the office of the superintendent, where he served successively as timekeeper, stenographer and chief clerk. Subsequently he was appointed superintendent of telegraph and on April 30, 1904, he was appointed superintendent and traffic manager of the Detroit & Toledo Shore Line (controlled by the C. N. R.), then in its first year of activity. On November 1, 1911, he was advanced to general manager, which position he was holding at the time of his death.

Table of Freight Operating Statistics appears on next left-hand page

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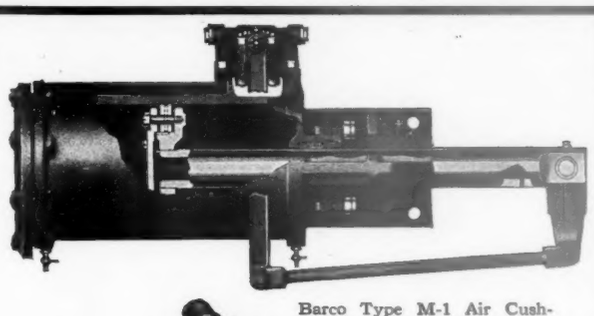

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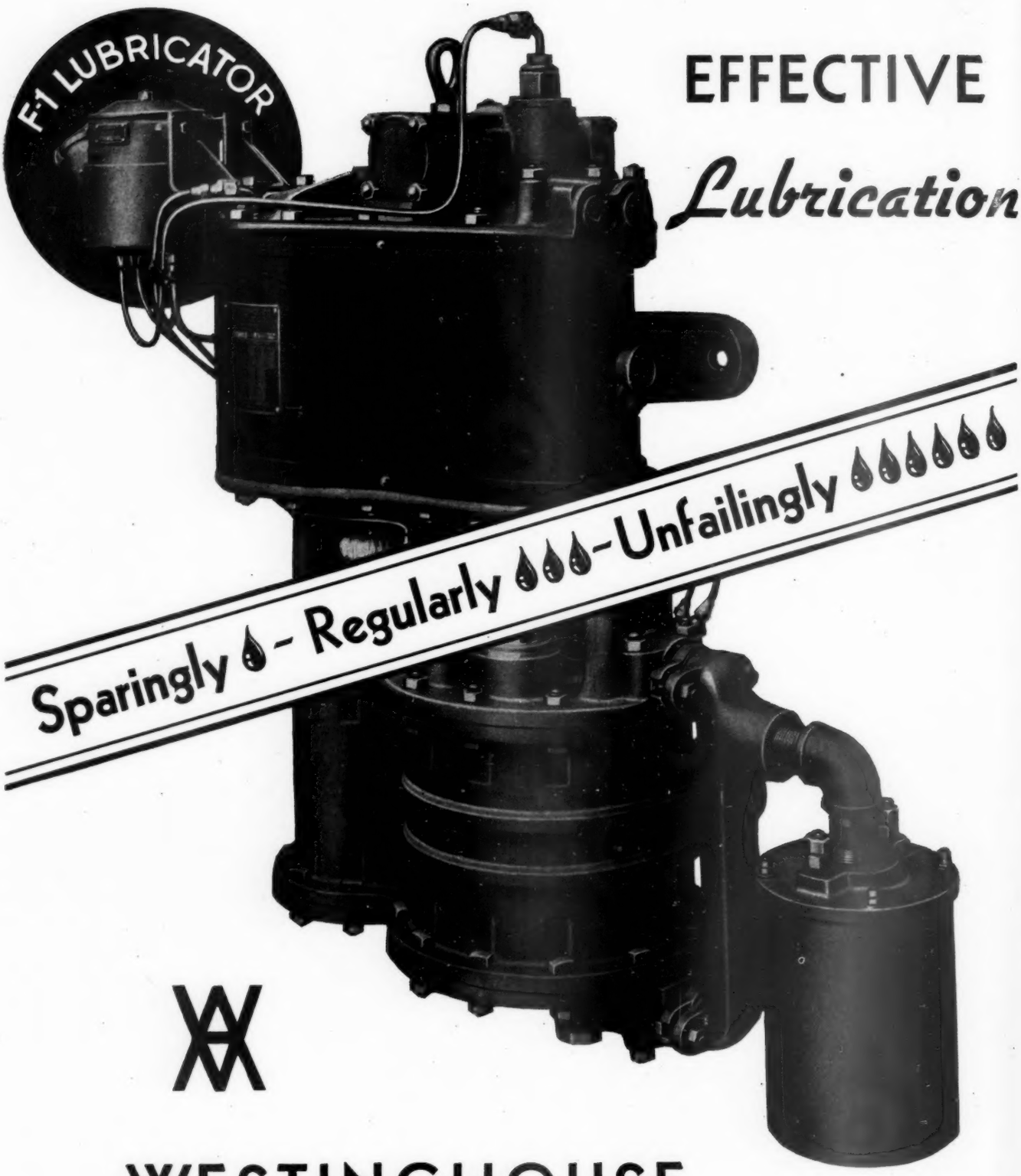
Freight Operating Statistics of Large Steam Railways—Selected Items for the Month of August

Region, road, and year	Miles of road operated	Train-miles	Locomotive-miles: Principal and helper	Locomotive-miles: Light	Car-miles: Loaded (*thousands*)	Car-miles: Per cent loaded	Ton-miles (*thousands*): Gross, excluding locomotives and tenders	Ton-miles (*thousands*): Net, revenue and non-revenue	Number of road locomotives on line: Serviceable: Not stored	Serviceable: Stored	Unserviceable	Per cent unserviceable
New England Region:												
Boston & Albany....1937	374	134,254	139,039	8,863	2,972	68.3	163,699	58,233	58	14	19	20.9
1936	373	126,490	130,235	8,499	3,064	69.6	159,873	56,778	60	6	26	28.3
Boston & Maine....1937	1,941	267,520	294,635	20,285	9,227	73.9	481,290	181,926	123	12	119	46.9
1936	1,963	263,765	291,731	25,456	9,286	72.9	487,733	187,023	113	8	163	57.4
N. Y., New Hav. & Hartf..1937	2,016	333,236	404,715	21,773	11,798	71.5	605,875	232,875	181	8	67	27.4
1936	2,016	323,553	393,549	19,309	11,007	69.6	576,227	220,342	171	19	99	36.4
Great Lakes Region:												
Delaware & Hudson....1937	830	218,206	279,798	29,493	7,437	69.2	437,534	210,476	108	115	37	14.2
1936	831	211,553	282,388	30,876	7,336	68.4	439,400	210,210	95	135	38	14.2
Del., Lack. & Western....1937	984	350,626	385,547	49,631	11,635	70.6	649,049	254,001	127	18	76	34.4
1936	983	345,626	380,867	51,139	11,637	70.2	653,135	257,882	133	1	106	44.2
Erie (incl. Chi. & Erie)...1937	2,277	696,097	729,656	35,669	30,028	66.2	1,822,274	694,791	230	37	199	42.7
1936	2,298	688,988	723,463	36,647	30,322	66.7	1,815,303	674,741	221	36	219	46.0
Grand Trunk Western....1937	1,027	251,638	252,312	2,142	6,767	64.4	404,232	145,336	87	2	45	33.6
1936	1,027	235,806	236,725	2,150	5,813	63.9	349,010	125,559	84	1	53	38.4
Lehigh Valley 1937	1,302	323,384	351,796	46,303	12,418	69.0	758,341	329,691	123	8	144	52.4
1936	1,312	346,887	368,891	44,188	12,597	67.7	764,118	323,149	124	10	155	53.6
New York Central....1937	10,692	2,659,374	2,783,341	162,512	89,183	62.0	5,822,872	2,411,390	912	203	351	23.9
1936	10,789	2,637,685	2,780,840	165,765	88,836	61.5	5,733,473	2,400,169	835	137	539	35.7
N. Y., Chicago & St. Louis.1937	1,672	483,605	490,548	6,709	17,531	64.6	1,061,650	416,775	164	16	15	7.7
1936	1,672	487,888	491,561	7,230	17,396	66.6	1,028,379	401,632	158	5	29	15.1
Pere Marquette 1937	2,081	340,988	346,187	5,603	8,679	62.4	556,385	220,337	113	8	26	17.7
1936	2,081	337,592	348,544	3,883	8,143	62.8	541,205	221,596	106	7	36	24.2
Pittsburgh & Lake Erie....1937	234	88,741	91,271	.....	3,343	61.4	283,848	160,285	40	15	22	28.6
1936	234	85,057	87,395	150	3,437	62.7	292,497	168,491	22	21	27	38.6
Wabash 1937	2,421	586,516	598,591	11,790	17,848	67.1	1,029,301	380,236	142	29	118	40.8
1936	2,435	574,564	582,686	12,202	17,377	67.0	991,304	352,797	135	32	143	46.1
Central Eastern Region:												
Baltimore & Ohio....1937	6,330	1,580,272	1,919,659	199,308	48,983	63.1	3,367,337	1,547,586	679	96	496	39.0
1936	6,366	1,495,689	1,828,046	184,353	46,159	64.6	3,096,702	1,425,886	643	35	628	48.1
Central of New Jersey....1937	681	148,129	165,848	30,563	4,635	63.9	303,629	141,755	77	10	67	43.5
1936	681	146,297	166,213	31,608	4,768	62.6	314,713	145,937	54	17	76	51.7
Chicago & Eastern Illinois..1937	931	175,761	176,387	2,841	4,567	67.2	275,727	115,990	57	..	45	44.1
1936	931	165,907	166,667	2,702	4,242	69.7	253,155	110,039	51	2	54	50.5
Elgin, Joliet & Eastern....1937	435	119,625	121,784	2,707	3,031	58.7	242,154	121,745	57	..	25	30.5
1936	434	96,496	97,476	1,191	2,457	61.4	188,557	93,602	57	..	30	34.5
Long Island 1937	393	26,991	27,627	14,874	239	51.6	17,832	6,406	27	11	11	22.4
1936	393	32,527	33,237	15,794	281	50.7	21,607	7,848	32	3	15	30.0
Pennsylvania System 1937	10,015	3,158,335	3,612,791	390,267	112,842	63.4	7,687,215	3,548,182	1,416	317	561	24.5
1936	10,034	3,069,863	3,467,532	393,870	108,663	64.2	7,267,219	3,313,297	1,423	130	821	34.6
Reading 1937	1,445	407,400	448,049	52,176	11,537	64.0	807,865	388,538	193	28	114	34.0
1936	1,449	410,521	445,258	50,176	11,751	63.3	834,480	401,158	193	57	100	28.6
Pocahontas Region:												
Chesapeake & Ohio....1937	3,050	862,778	908,065	38,611	39,212	56.9	3,298,745	1,803,573	388	54	107	19.5
1936	3,050	875,606	926,098	41,010	41,589	57.1	3,486,049	1,915,469	401	39	99	18.4
Norfolk & Western....1937	2,179	694,453	728,431	39,743	30,579	58.1	2,482,973	1,310,028	306	29	24	6.7
1936	2,145	672,152	716,035	34,075	29,075	60.3	2,393,194	1,314,296	256	64	47	12.8
Southern Region:												
Atlantic Coast Line....1937	5,077	506,425	508,526	7,486	11,117	65.3	609,806	231,614	219	65	94	24.9
1936	5,082	502,173	504,003	7,044	10,219	67.9	535,706	200,141	198	74	120	30.6
Central of Georgia....1937	1,886	257,800	259,285	3,410	5,517	72.0	300,362	120,471	108	..	16	12.9
1936	1,886	243,863	245,319	3,535	5,304	74.7	277,961	108,803	98	..	27	21.6
Illinois Central (incl. Y. 1937	6,546	1,434,760	1,445,787	26,822	37,564	62.7	2,395,995	972,222	649	55	160	18.5
& M. V.)....1936	6,562	1,552,307	1,561,562	29,550	37,843	62.9	2,423,024	992,782	669	13	216	24.1
Louisville & Nashville....1937	4,931	1,080,515	1,168,441	27,551	25,583	59.1	1,809,635	859,334	370	70	125	22.1
1936	4,979	1,072,347	1,174,513	29,337	26,103	61.2	1,822,688	887,151	351	19	209	36.1
Seaboard Air Line....1937	4,295	450,943	459,420	4,929	11,159	69.8	616,766	246,033	198	30	84	26.9
1936	4,295	405,624	417,804	3,503	10,528	70.4	570,616	223,140	199	21	114	34.1
Southern 1937	6,596	1,278,265	1,298,511	19,425	29,084	69.0	1,610,390	652,444	499	3	264	35.5
1936	6,596	1,242,471	1,263,391	20,856	29,878	70.7	1,579,136	619,117	478	39	271	34.4
Northwestern Region:												
Chicago & North Western..1937	8,397	1,046,159	1,090,009	26,709	28,361	62.5	1,792,812	675,194	438	66	188	27.2
1936	8,355	1,084,322	1,137,666	33,667	29,428	63.3	1,841,968	676,844	440	66	206	28.9
Chicago Great Western....1937	1,450	279,589	280,288	5,671	8,148	62.5	502,220	186,000	67	..	24	26.4
1936	1,458	280,358	281,076	11,949	8,296	62.2	510,009	181,030	67	..	19	22.1
Chi., Milw., St. P. & Pac...1937	11,105	1,408,421	1,492,985	65,366	38,879	63.0	2,476,217	1,015,134	542	28	99	14.8
1936	11,120	1,492,873	1,603,483	68,077	41,388	61.4	2,625,113	1,038,508	468	74	136	20.1
Chi., St. P., Minneap. & Om.1937	1,636	268,887	287,011	14,571	5,964	66.6	379,706	168,672	120	7	20	13.6
1936	1,637	257,227	277,106	11,475	5,758	65.1	365,564	151,418	94	34	19	12.9
Great Northern 1937	7,997	1,000,738	1,002,267	33,455	35,708	56.3	2,668,360	1,237,611	375	29	148	26.8
1936	8,059	892,102	891,859	27,919	31,254	57.1	2,239,624	1,003,913	358	64	166	28.2
Minneap., St. P. & S. St. M.1937	4,278	432,412	442,001	4,989	10,212	62.1	644,821	275,858	130	..	26	16.7
1936	4,273	391,278	399,905	5,274	9,351	67.0	560,866	237,475	121	..	28	18.8
Northern Pacific 1937	6,429	807,348	856,208	46,635	25,197	62.6	1,605,991	658,940	385	19	62	13.3
1936	6,429	854,764	960,765	67,638	25,773	58.8	1,674,652	613,012	365	8	73	16.4
Central Western Region:												
Alton 1937	912	217,883	235,094	1,722	5,037	64.9	311,569	127,785	72	..	25	25.8
1936	928	209,710	218,961	1,839	4,846	62.8	308,772	119,156	78	1	22	21.8
Atch., Top. & S. Fe (incl. 1937	13,541	1,960,087	2,126,052	89,651	54,999	61.0	3,565,434	1,207,942	651	25	255	27.4
G.C. & S.F. & P. & S.F.).1936	13,228	1,842,059	1,995,134	94,367	52,394	62.2	3,327,470	1,115,046	553	84	332	34.3
Chicago, Burl. & Quincy...1937	8,934	1,306,254	1,361,145	48,281	36,977	61.6	2,265,504	941,488	467	5	74	13.6
1936	8,935	1,370,215	1,433,967	54,598	36,697	59.9	2,275,925	925,973	442	2	96	17.8
Chi., Rock I. & Pac. (incl. 1937	8,113	1,209,249	1,222,836	7,509	27,895	61.8	1,744,817	668,599	404	46	174	27.9
Chi., Rock I. & Gulf)....1936	8,179	1,179,172	1,197,114	5,523	26,409	64.4	1,607,781	629,948	381	38	281	40.1
Denver & Rio Gr. Western.1937	2,576	378,230	427,753	54,484	9,310	64.0	605,803	246,793	189	5	18	8.5
1936	2,584	363,595	402,109	47,162	9,170	64.5	595,390	234,333	184	3	18	8.8
Southern Pac.—Pac. Lines.1937	8,607	1,631,300	1,785,974	215,784	50,870	60.9	3,299,470	1,137,845	641	8	140	17.7
1936	8,614	1,505,062	1,641,611	192,596	47,407	63.4	2,994,583	1,064,376	583	8	184	23.7
Union Pacific 1937	9,911	1,936,246	2,004,093	103,507	64,139	61.3	4,061,959	1,373,722	608	68	198	22.7
1936	9,918	2,014,204	2,087,740	113,868	63,213	62.6	3,984,354	1,366,311	617	40	200	23.3
Southwestern Region:												
Mo.-Kansas-Texas Lines ...1937	3,282	427,003	432,637	5,802	11,691	61.4	722,249	261,964	118	4	80	39.6
1936	3,282	378,793	383,795	6,450	10,317	63.7	618,931	223,897	93	33	81	39.1
Missouri Pacific 1937	7,144	1,226,341	1,267,822	27,905	33,974	63.3	2,188,125	860,960	411	44	89	16.4
1936	7,188	1,265,251	1,300,418	30,674	35,303	62.0	2,213,429	854,780	330	74	127	23.9
St. Louis-San Francisco....1937	4,858	817,478	827,797	12,446	17,379	60.8	1,115,587	452,626	301	37	71	17.4
1936	4,888	748,326	754,910	10,685	16,418	62.2	1,013,665	395,792	283	77	65	15.3
St. Louis Southw. Lines....1937	1,690	297,734	299,465	4,130	7,628	66.7	441,233	171,631	90	12	18	15.0
1936	1,733	229,267	229,930	2,915	6,595	68.1	350,198	135,515	92	21	6	5.0
Texas & New Orleans....1937	4,419	613,619	613,648	7,007	14,660	65.2	887,725	337,353	244	14	31	10.7
1936	4,416	537,465	537,558	6,892	12,964	67.3	782,143	307,230	226	17	55	18.5
Texas & Pacific....1937	1,932	302,257	302,257	1,962	8,987	64.0	551,855	201,592	79	9	94	51.6
1936	1,945	269,428	269,428	1,503	8,320	64.5	501,009	183,980	56	63	96	44.7

Compiled by the Bureau of Statistics, Interstate Commerce Commission. ***Subject to revision.***

1937, Compared with August, 1936, for Roads with Annual Operating Revenues Above $25,000,000

Region, road, and year	Number of freight cars on line: Home	Foreign	Total	Per cent unserviceable	Gross ton-miles per train-hour, excluding locomotives and tenders	Gross ton-miles per train-mile, excluding locomotives and tenders	Net ton-miles per train-mile	Net ton-miles per loaded car-mile	Net ton-miles per car-day	Car-miles per car-day	Net ton-miles per mile of road per day	Pounds of coal per 1,000 gross ton-miles, including locomotives and tenders	Locomotive-miles per locomotive-day
New England Region:													
Boston & Albany.....1937	2,289	4,068	6,357	24.7	20,719	1,229	437	19.6	303	22.7	5,023	153	56.0
1936	2,357	3,867	6,224	26.0	21,201	1,268	450	18.5	299	23.2	4,910	148	52.4
Boston & Maine.....1937	7,201	7,299	14,500	13.6	25,005	1,809	684	19.7	403	27.6	3,023	98	43.4
1936	7,879	7,462	15,341	16.7	25,465	1,857	712	20.1	401	27.3	3,073	99	38.7
N. Y., New Hav. & Hartf..1937	8,451	10,834	19,285	13.0	26,180	1,850	711	19.7	388	27.5	3,726	94	59.0
1936	11,874	10,112	21,986	18.0	25,530	1,812	693	20.0	323	23.2	3,526	98	52.1
Great Lakes Region:													
Delaware & Hudson.....1937	8,106	3,345	11,451	4.7	29,072	2,013	968	28.3	566	28.9	8,180	99	41.4
1936	8,389	3,389	11,778	5.0	29,625	2,092	1,001	28.7	565	28.8	8,163	102	40.6
Del., Lack. & Western.....1937	13,029	5,914	18,943	14.9	31,254	1,877	734	21.8	430	27.9	8,327	127	69.3
1936	13,573	5,815	19,388	17.2	31,569	1,917	757	22.2	425	27.3	8,463	125	63.0
Erie (incl. Chi. & Erie)...1937	16,122	15,101	31,223	6.2	44,349	2,639	1,006	23.1	711	46.4	9,843	88	58.7
1936	17,063	20,003	37,066	3.2	43,424	2,655	987	22.3	591	39.9	9,472	92	57.1
Grand Trunk Western.....1937	5,129	6,470	11,599	15.8	31,490	1,619	582	21.5	402	29.1	4,565	88	67.4
1936	5,628	6,551	12,179	18.3	29,012	1,497	539	21.6	351	25.4	3,944	93	61.3
Lehigh Valley 1937	10,523	9,237	19,760	8.3	41,780	2,379	1,034	26.5	533	29.1	8,168	105	49.3
1936	12,080	9,141	21,221	6.4	38,398	2,240	947	25.7	494	28.4	7,945	113	49.8
New York Central.....1937	92,122	69,739	161,861	15.4	37,130	2,211	916	27.0	485	29.0	7,275	94	72.6
1936	101,637	66,258	167,895	21.2	36,573	2,200	921	27.0	463	27.8	7,176	96	70.6
N. Y., Chicago & St. Louis.1937	6,633	8,232	14,865	2.8	39,382	2,198	863	23.8	896	58.4	8,041	81	89.0
1936	6,000	7,944	13,944	3.5	38,257	2,113	825	23.1	900	58.5	7,749	82	90.4
Pere Marquette 1937	8,499	6,935	15,434	4.3	26,854	1,636	648	25.4	476	30.1	3,415	85	86.2
1936	8,558	6,216	14,774	5.9	26,230	1,605	657	27.2	500	29.3	3,435	87	84.6
Pittsburgh & Lake Erie....1937	8,293	10,392	18,685	30.8	47,316	3,209	1,812	47.9	274	9.3	22,096	82	43.3
1936	12,882	11,675	24,557	42.9	48,483	3,445	1,985	49.0	213	6.9	23,227	84	44.9
Wabash 1937	12,785	9,589	22,374	6.5	36,031	1,772	655	21.3	547	38.2	5,066	105	71.9
1936	11,940	9,900	21,840	4.7	35,195	1,742	620	20.3	529	38.9	4,674	99	65.5
Central Eastern Region:													
Baltimore & Ohio.....1937	58,225	30,686	88,941	11.3	28,242	2,162	994	31.6	568	28.5	7,887	127	57.6
1936	66,352	27,562	93,914	20.1	27,121	2,101	967	30.9	485	24.3	7,225	131	53.6
Central of New Jersey.....1937	9,469	10,317	19,786	27.7	25,841	2,170	1,013	30.6	240	12.3	6,715	129	53.8
1936	11,181	10,612	21,793	33.4	26,226	2,253	1,045	30.6	219	11.4	6,913	141	59.3
Chicago & Eastern Illinois..1937	2,783	3,207	5,990	4.0	28,257	1,574	662	25.4	606	35.5	4,019	112	59.8
1936	3,195	3,202	6,397	9.7	27,006	1,528	664	25.9	538	29.8	3,813	116	54.4
Elgin, Joliet & Eastern.....1937	9,002	6,075	15,077	5.0	18,200	2,078	1,045	40.2	258	10.9	9,028	105	69.5
1936	7,962	5,083	13,045	4.9	17,690	1,997	991	38.1	238	10.2	6,956	101	50.3
Long Island 1937	369	3,010	3,379	2.9	5,328	675	242	26.8	66	4.8	526	327	40.6
1936	606	3,176	3,782	2.4	5,490	677	246	27.9	71	5.0	645	327	45.3
Pennsylvania System 1937	181,994	69,638	251,632	16.0	35,728	2,480	1,145	31.4	454	22.8	11,429	108	62.8
1936	192,178	66,627	258,805	18.2	34,027	2,409	1,098	30.5	413	21.1	10,652	112	59.0
Reading 1937	22,819	13,043	35,862	9.3	25,651	1,987	955	33.7	349	16.2	8,674	126	52.7
1936	23,180	11,549	34,729	11.3	25,158	2,038	980	34.1	362	16.7	8,931	128	49.5
Pocahontas Region:													
Chesapeake & Ohio.....1937	42,479	13,052	55,531	1.6	55,423	3,869	2,115	46.0	947	36.2	19,075	68	60.8
1936	36,967	15,079	52,046	1.5	56,320	4,025	2,211	46.1	1,176	44.7	20,259	68	63.7
Norfolk & Western.....1937	33,668	5,562	39,230	1.7	53,968	3,623	1,912	42.8	1,106	44.4	19,394	89	74.1
1936	28,356	6,100	34,456	2.3	51,913	3,581	1,967	45.2	1,202	44.1	19,765	94	72.4
Southern Region:													
Atlantic Coast Line.....1937	15,334	7,873	23,207	22.0	20,579	1,207	458	20.8	334	24.6	1,472	106	47.5
1936	17,711	7,595	25,306	27.0	18,602	1,069	399	19.6	260	19.6	1,270	109	44.7
Central of Georgia.....1937	3,542	4,651	8,193	2.4	21,555	1,168	468	21.8	491	31.2	2,061	118	74.5
1936	2,567	3,859	6,426	3.6	20,782	1,144	448	20.5	546	35.6	1,861	115	70.5
Illinois Central (incl. Y. 1937	29,599	19,761	49,360	13.4	27,141	1,678	681	25.9	636	39.2	4,791	118	59.6
& M. V.).....1936	34,594	22,180	56,774	26.0	25,901	1,571	644	26.2	569	34.5	4,880	120	62.4
Louisville & Nashville.....1937	34,363	8,853	43,216	12.7	25,735	1,678	797	33.6	634	31.9	5,622	115	73.7
1936	32,862	9,925	42,787	25.7	26,193	1,703	829	34.0	639	30.7	5,748	117	72.1
Seaboard Air Line.....1937	9,546	5,610	15,156	2.3	22,465	1,384	552	22.0	521	33.9	1,848	118	53.8
1936	8,556	5,778	14,334	2.7	23,119	1,420	555	21.2	516	33.8	1,676	111	43.8
Southern 1937	20,480	18,713	39,193	12.2	21,792	1,268	514	22.4	542	35.0	3,191	137	58.4
1936	22,670	18,495	41,165	16.7	21,280	1,278	501	20.7	493	33.6	3,028	140	55.2
Northwestern Region:													
Chicago & North Western..1937	37,485	20,540	58,025	8.2	26,521	1,760	663	23.8	364	24.4	2,594	105	57.5
1936	36,107	24,110	60,217	8.9	26,099	1,705	626	23.0	357	24.5	2,613	109	58.4
Chicago Great Western.....1937	2,074	4,848	6,922	2.6	32,420	1,799	666	22.8	899	63.0	4,138	115	106.5
1936	1,898	4,441	6,339	2.5	31,709	1,821	647	21.8	886	65.3	4,005	117	115.1
Chi., Milw., St. P. & Pac...1937	43,100	21,098	64,198	2.7	28,135	1,768	725	26.1	508	30.9	2,949	110	82.1
1936	44,101	24,790	68,891	2.6	27,963	1,768	700	25.1	495	32.2	3,013	113	87.1
Chi., St. P., Minneap. & Om.1937	3,729	6,952	10,681	7.4	18,679	1,454	646	28.3	537	28.5	3,326	101	71.0
1936	3,534	6,740	10,274	9.2	18,732	1,440	597	26.3	486	28.4	2,984	104	69.7
Great Northern 1937	36,987	19,640	56,627	5.0	38,298	2,687	1,246	34.7	758	38.9	4,992	91	67.5
1936	36,688	17,383	54,071	6.0	37,978	2,532	1,135	32.1	626	34.1	4,018	95	55.9
Minneap., St. P. & S. St. M.1937	12,469	5,845	18,314	3.9	23,176	1,504	644	27.0	501	29.9	2,080	88	96.3
1936	12,576	5,523	18,099	6.0	22,311	1,440	610	25.4	431	25.4	1,793	91	87.3
Northern Pacific 1937	27,122	8,377	35,499	7.8	30,498	2,000	821	26.2	632	38.6	3,306	134	68.2
1936	26,122	10,561	36,683	9.2	30,551	1,968	720	23.8	564	40.3	3,076	136	80.8
Central Western Region:													
Alton 1937	2,376	6,248	8,624	17.4	33,391	1,436	589	25.4	470	28.5	4,520	113	82.8
1936	2,313	6,729	9,042	23.0	34,081	1,478	570	24.6	424	27.5	4,142	108	75.0
Atch., Top. & S. Fe (incl. 1937	67,585	14,036	81,621	8.4	34,102	1,824	618	22.0	466	34.8	2,878	110	81.0
G.C. & S.F. & P. & S.F.).1936	64,460	13,048	77,508	11.0	33,943	1,811	607	21.3	460	34.8	2,719	110	74.1
Chicago, Burl. & Quincy...1937	25,851	17,848	43,699	7.0	29,293	1,740	723	25.5	657	41.9	3,399	109	89.2
1936	25,017	18,228	43,245	8.3	28,548	1,672	680	25.2	678	44.9	3,343	112	94.4
Chi., Rock I. & Pac. (incl. 1937	20,880	13,625	34,505	6.2	25,904	1,447	554	24.0	619	41.8	2,658	119	67.5
Chi., Rock I. & Gulf)....1936	22,777	14,271	37,048	9.2	24,092	1,367	536	23.9	553	36.0	2,485	123	58.3
Denver & Rio Gr. Western.1937	11,117	6,684	17,801	4.1	24,594	1,610	656	26.5	462	27.3	3,090	149	80.2
1936	12,193	5,297	17,490	7.4	24,969	1,645	648	25.6	432	26.2	2,925	151	75.7
Southern Pac.—Pac. Lines.1937	33,063	36,084	69,147	6.1	31,073	2,040	704	22.4	547	40.2	4,265	102	89.2
1936	32,164	29,052	61,216	7.8	30,822	2,006	713	22.5	557	39.0	3,986	101	81.1
Union Pacific 1937	39,384	23,405	62,789	10.7	43,214	2,108	713	21.4	694	52.9	4,471	108	81.9
1936	39,264	23,538	62,802	11.4	40,618	1,990	683	21.6	700	51.7	4,444	110	86.3
Southwestern Region:													
Mo.-Kansas-Texas Lines ...1937	4,144	5,161	9,305	1.9	31,018	1,695	615	22.4	848	61.7	2,575	79	76.6
1936	4,442	5,478	9,920	6.3	29,495	1,636	592	21.7	728	52.7	2,201	79	66.8
Missouri Pacific 1937	15,921	21,910	37,831	2.8	30,999	1,795	706	25.3	720	44.9	3,888	113	83.6
1936	15,437	21,395	36,832	3.1	30,517	1,757	678	24.2	737	49.1	3,836	113	86.7
St. Louis-San Francisco....1937	16,097	5,986	22,083	7.0	26,266	1,371	556	26.0	659	41.6	3,006	122	70.4
1936	16,399	8,512	24,911	6.7	25,531	1,358	530	24.1	512	34.2	2,612	121	62.4
St. Louis Southw. Lines....1937	2,319	3,682	6,001	2.2	27,091	1,484	577	22.5	937	62.4	3,276	97	86.3
1936	2,855	2,864	5,719	3.7	28,076	1,529	592	20.5	752	53.8	2,522	88	66.6
Texas & New Orleans.....1937	6,680	12,137	18,817	5.4	26,217	1,456	553	23.0	586	39.1	2,463	85	74.9
1936	6,892	12,262	19,154	7.4	25,620	1,464	575	23.7	543	34.0	2,244	85	63.0
Texas & Pacific.....1937	2,407	5,608	8,015	1.7	32,103	1,826	667	22.4	825	57.5	3,366	80	58.6
1936	2,623	5,112	7,735	3.2	31,022	1,862	684	22.1	777	54.5	3,051	81	44.3



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